TOMORROW
starts here.
CISCO
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# Understanding the Cisco Cloud Collaboration Platform

BRKUCC-2675

Vanessa Sulikowski

Distinguished Systems Engineer

Cisco live!

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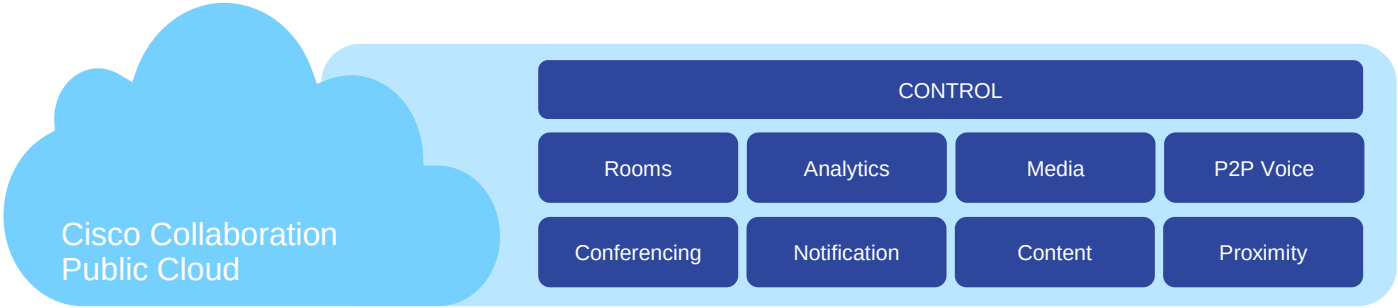
MOBILE
+
CLOUD

the most disruptive force in IT…
the end user

# The Agile Worker is Transforming the Enterprise

# Cloud Collaboration Best Way to Achieve Agility….




Velocity

Visibility

Versatility

Virtualisation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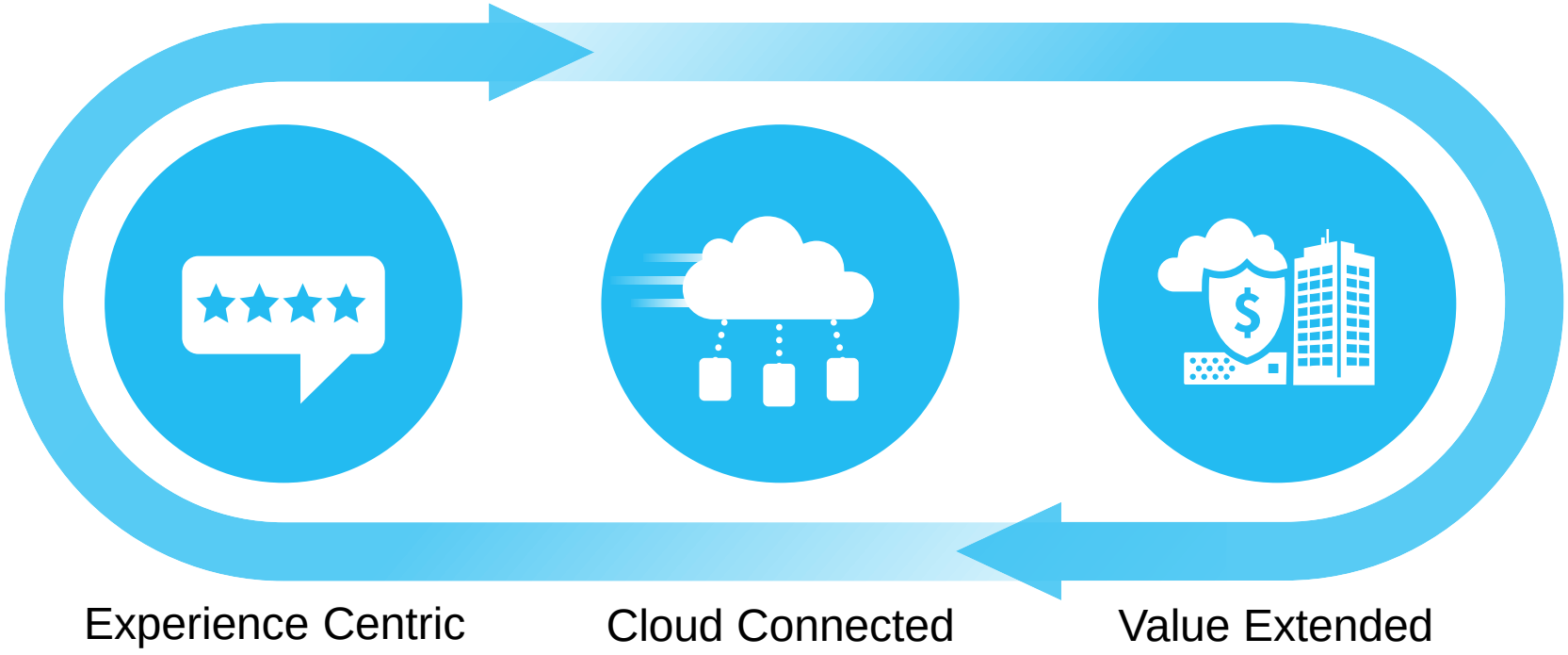
# Collaboration Strategy





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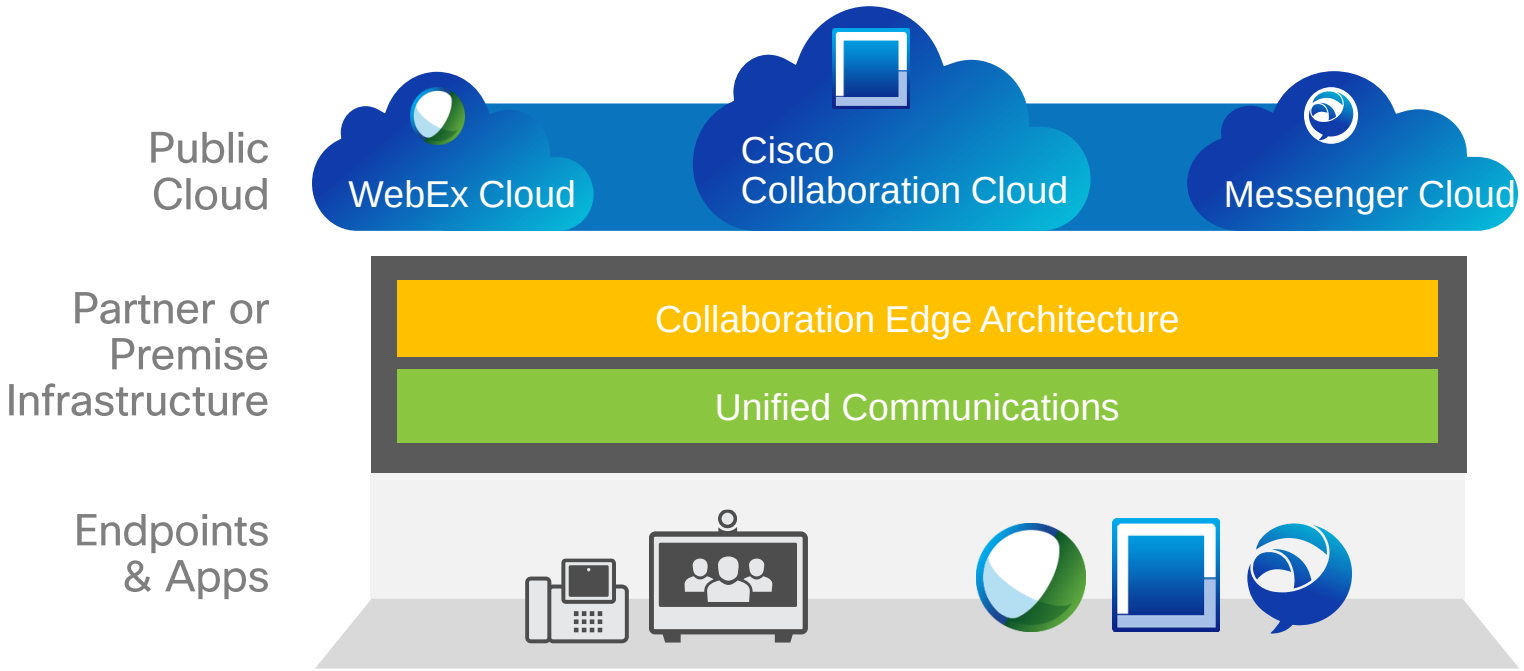
# Fusion – Bringing Cloud and On-Prem Together





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# Collaboration Preferred Architecture

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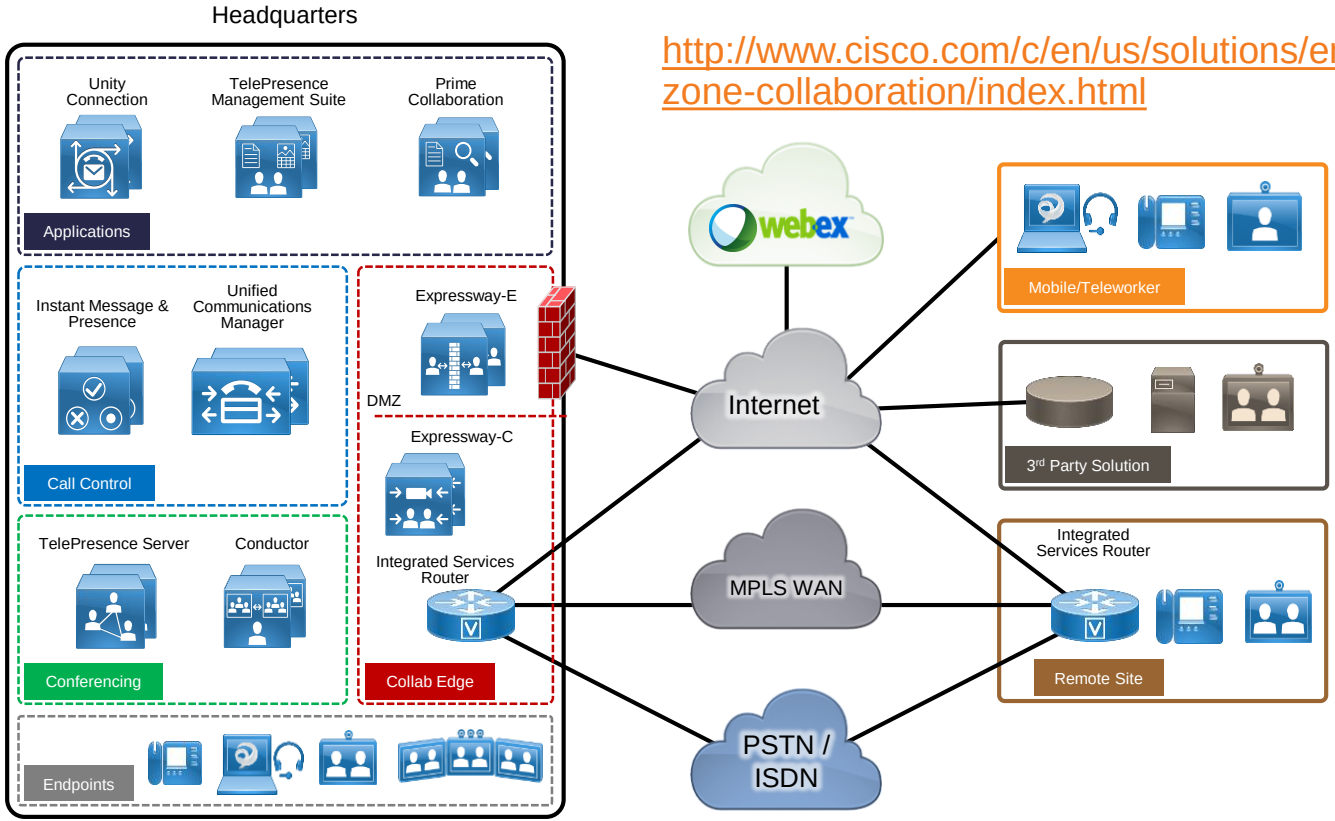
# Preferred Architecture Deployment




http://www.cisco.com/c/en/us/solutions/enterprise/design-zone-collaboration/index.html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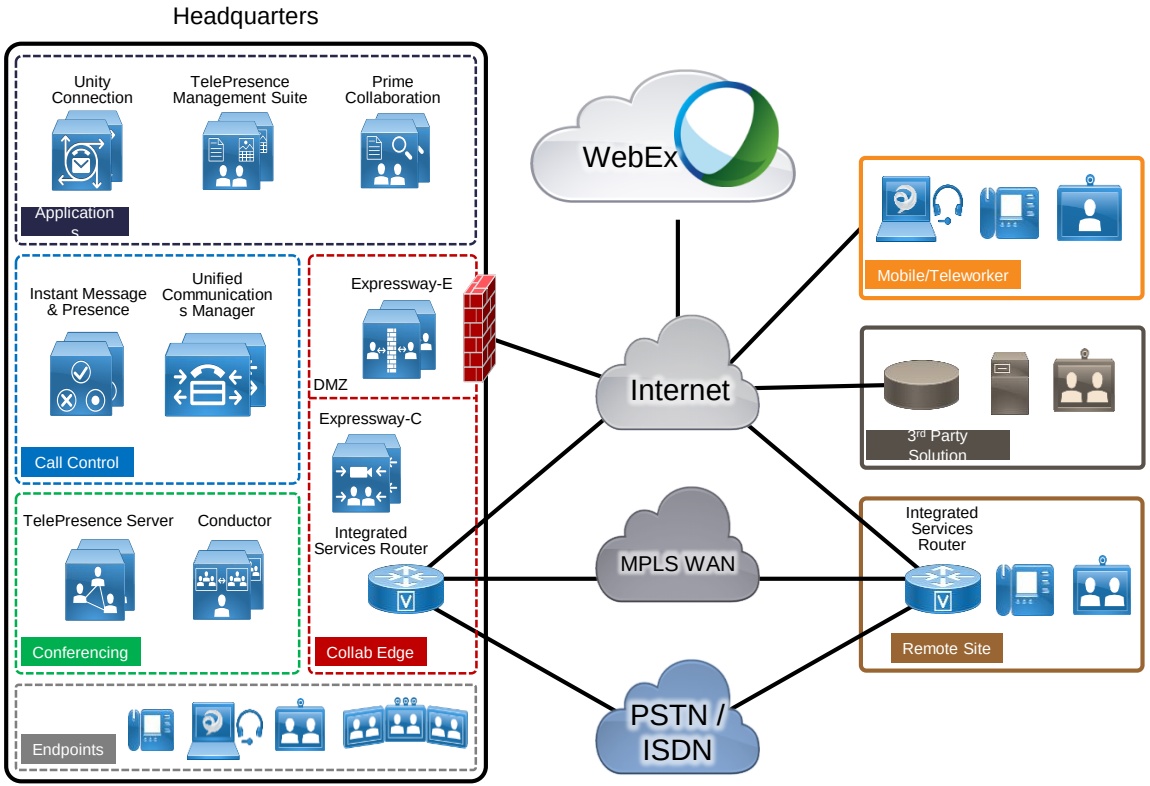
# Fusion - Existing Infrastructure Integral….




**WebEx Services + IM**

WebEx platform is foundational

Entitlement will carry forward

**UCM, Collab Edge**

UCM as our call control platform

Expressway will be key for Fusion services

**Jabber / CM IM&P**

Remains our premise soft client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# Cloud Collaboration Platform

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# Cisco Collaboration Cloud

## Iteration

Continuous delivery Software Platform

## Fusion

Ties together today's core collaboration products with cloud

## Security

User messaging and content encrypted in transit and at rest

## Ecosystem

Partners, developers & administrators as first class citizens


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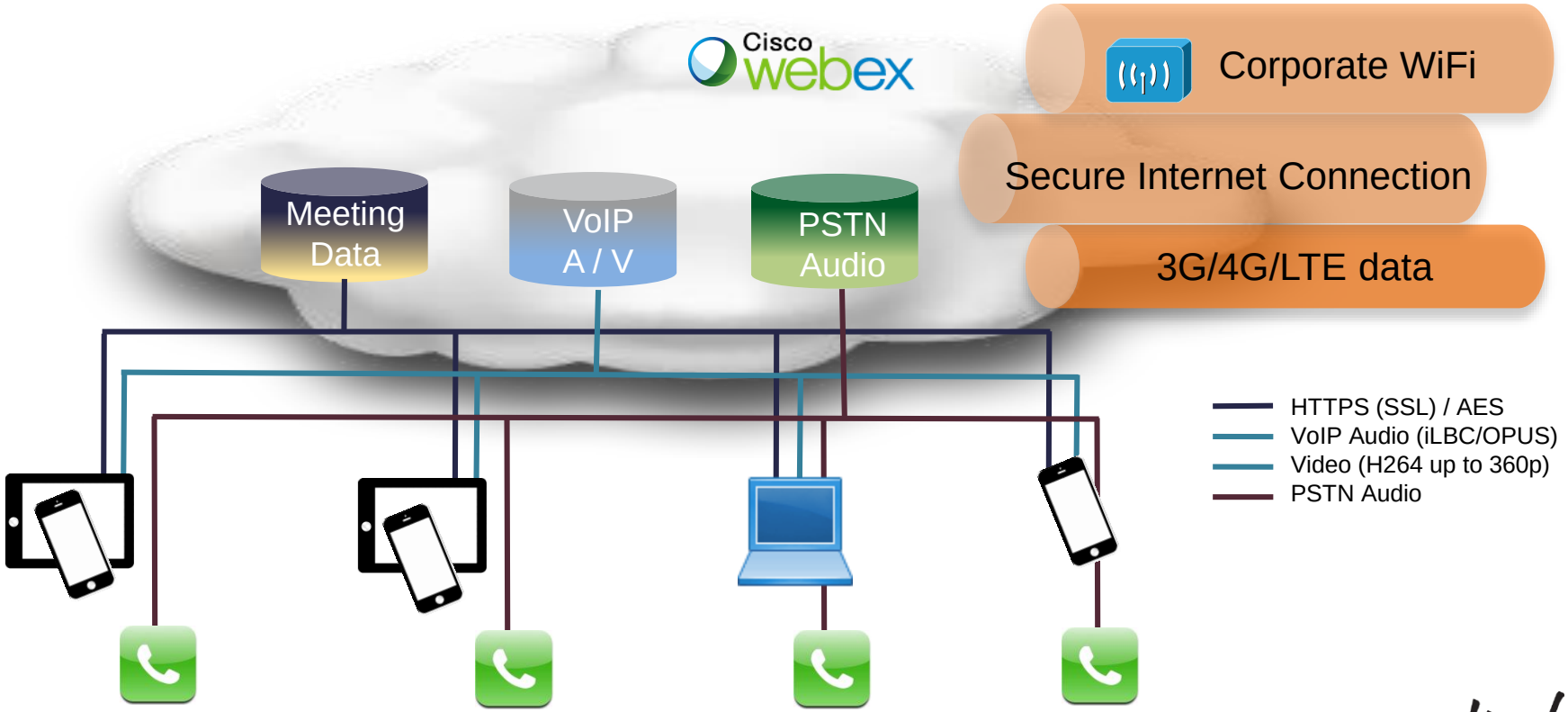
# Cisco WebEx Cloud (the cisco cloud you already know)





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# Cisco Collaboration Cloud

PaaS/IaaS – OpenStack, Cloud native delivery

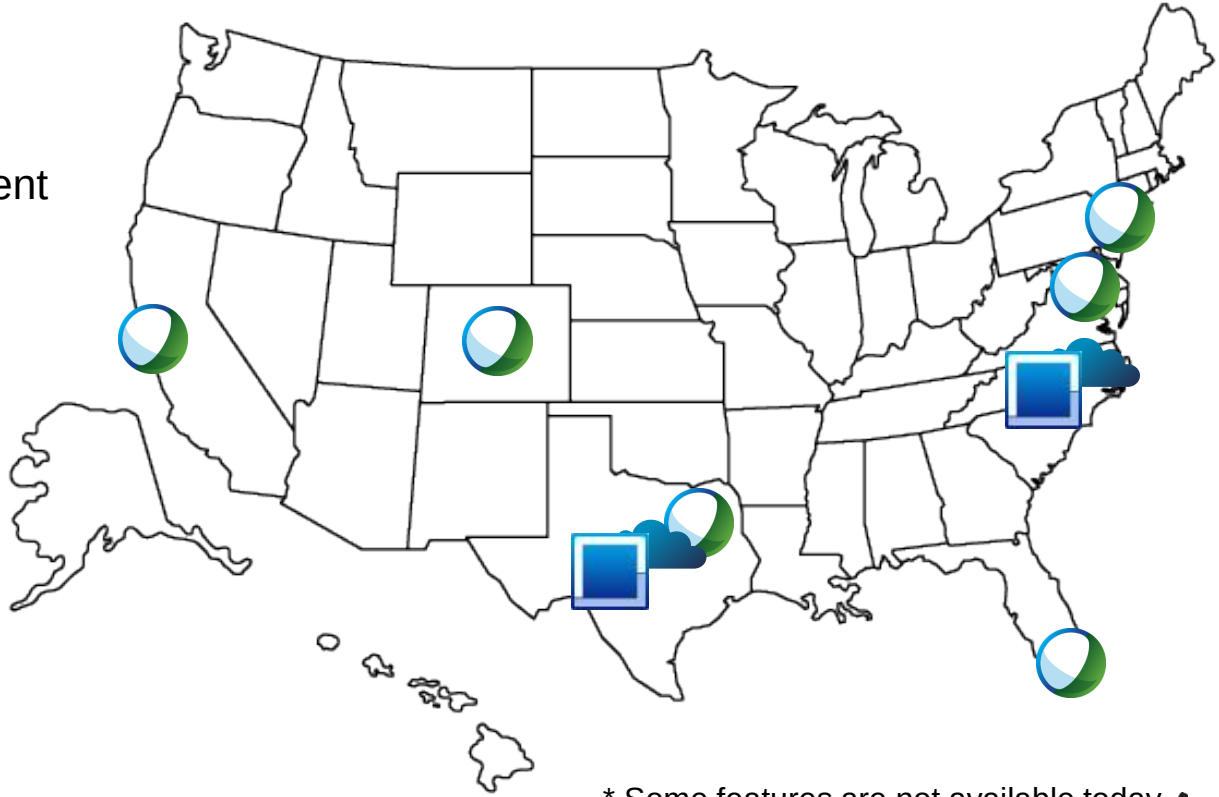
Using Cisco Intercloud  deployment

Integrating with Existing services
(WebEx Meetings, Identity, Messenger)

Continuous, Consistent & Rapid Deployment

Scale-out local/multi data centre

Geographic reach & resiliency
(Active – Active)



* Some features are not available today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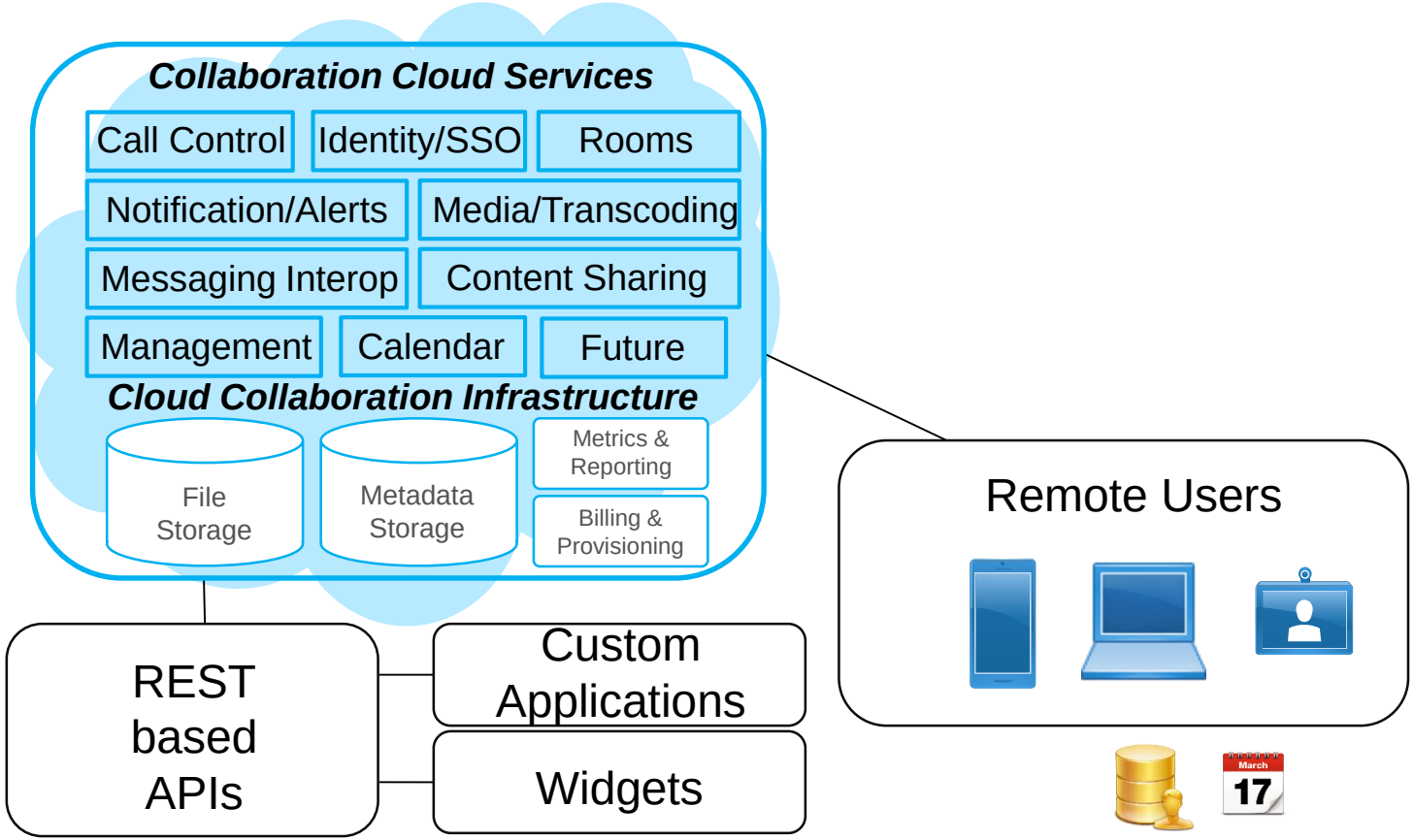
# The Cisco Collaboration Cloud





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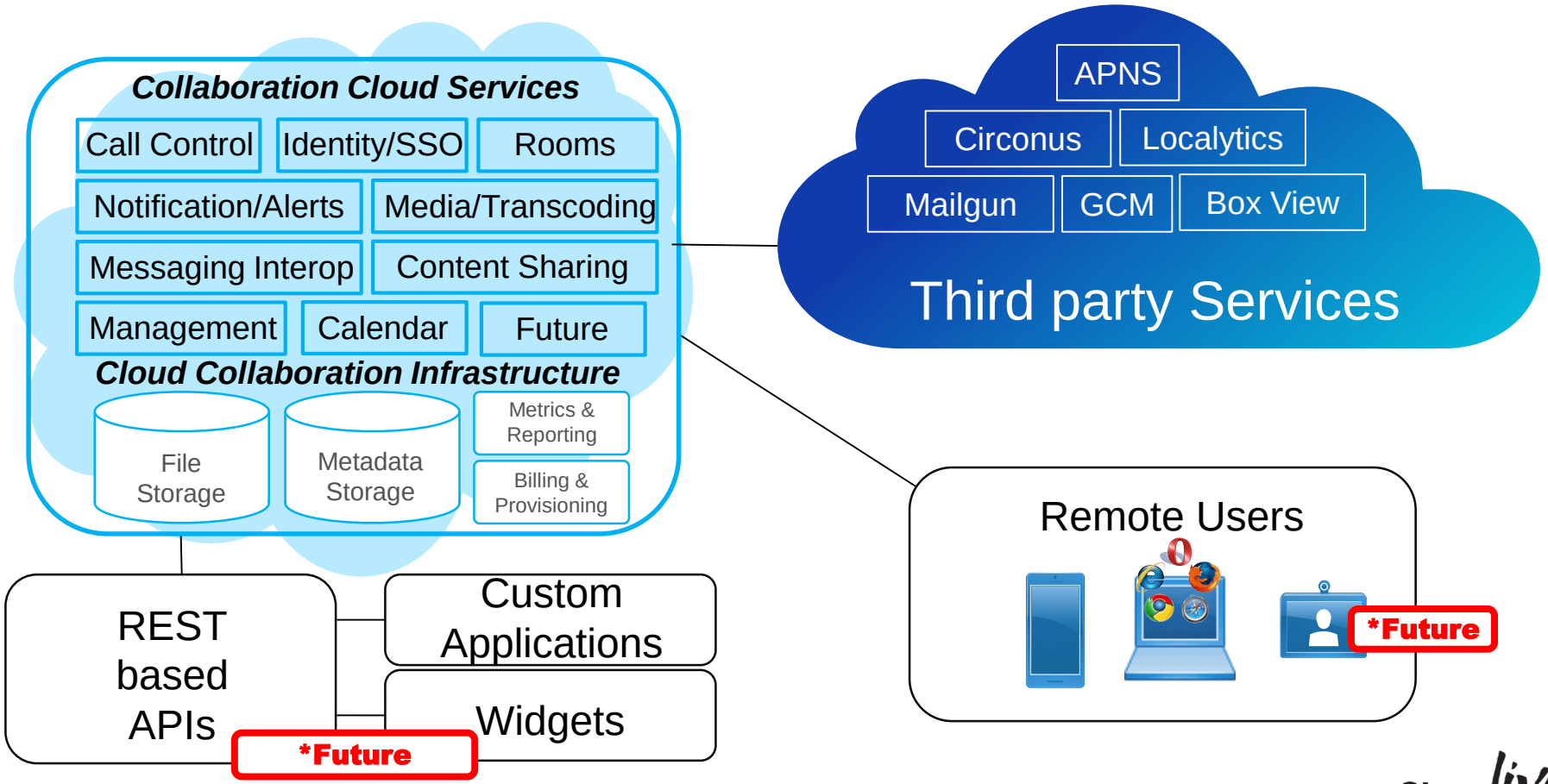
# Cisco Collaboration Cloud





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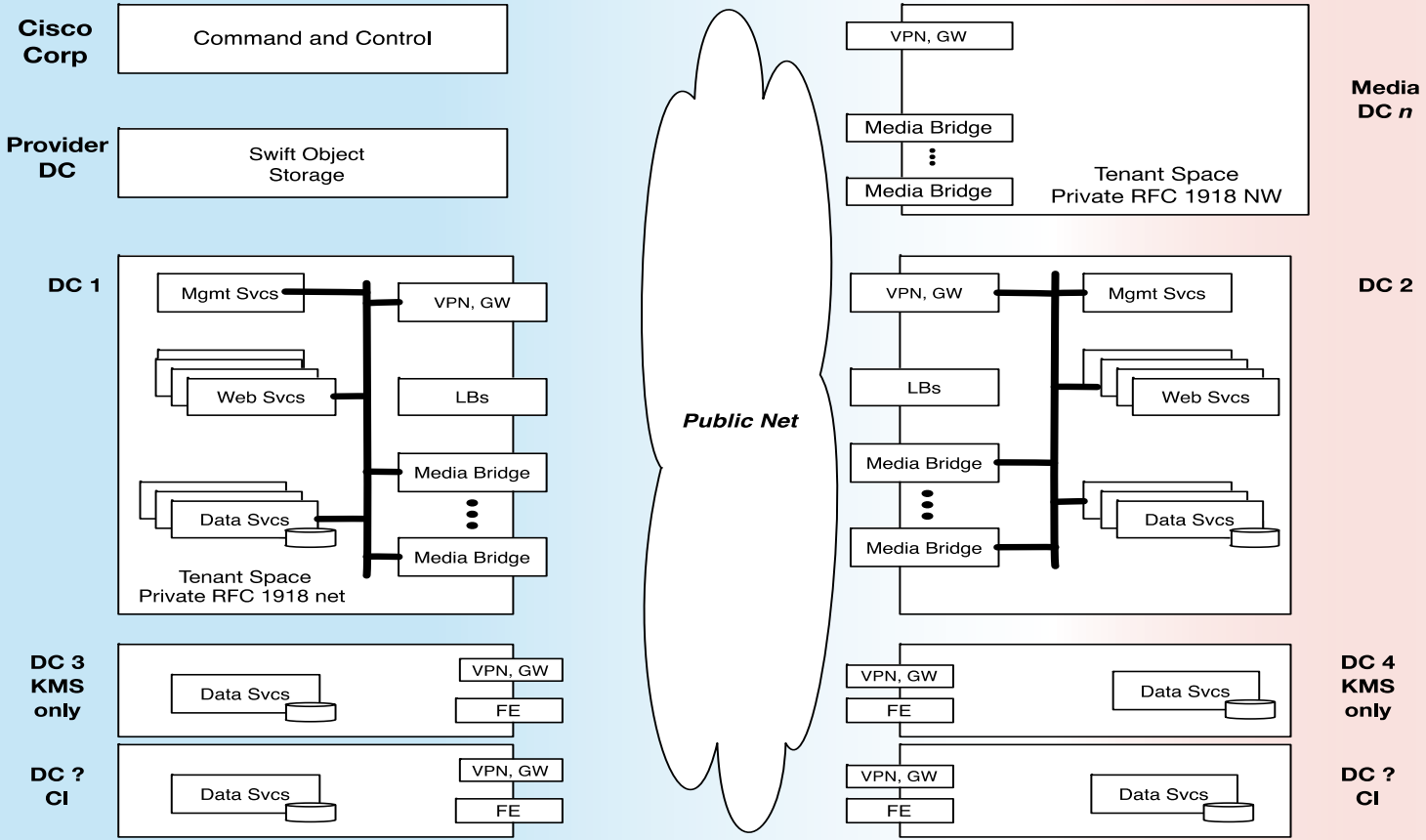
# Cisco Collaboration Cloud Architecture

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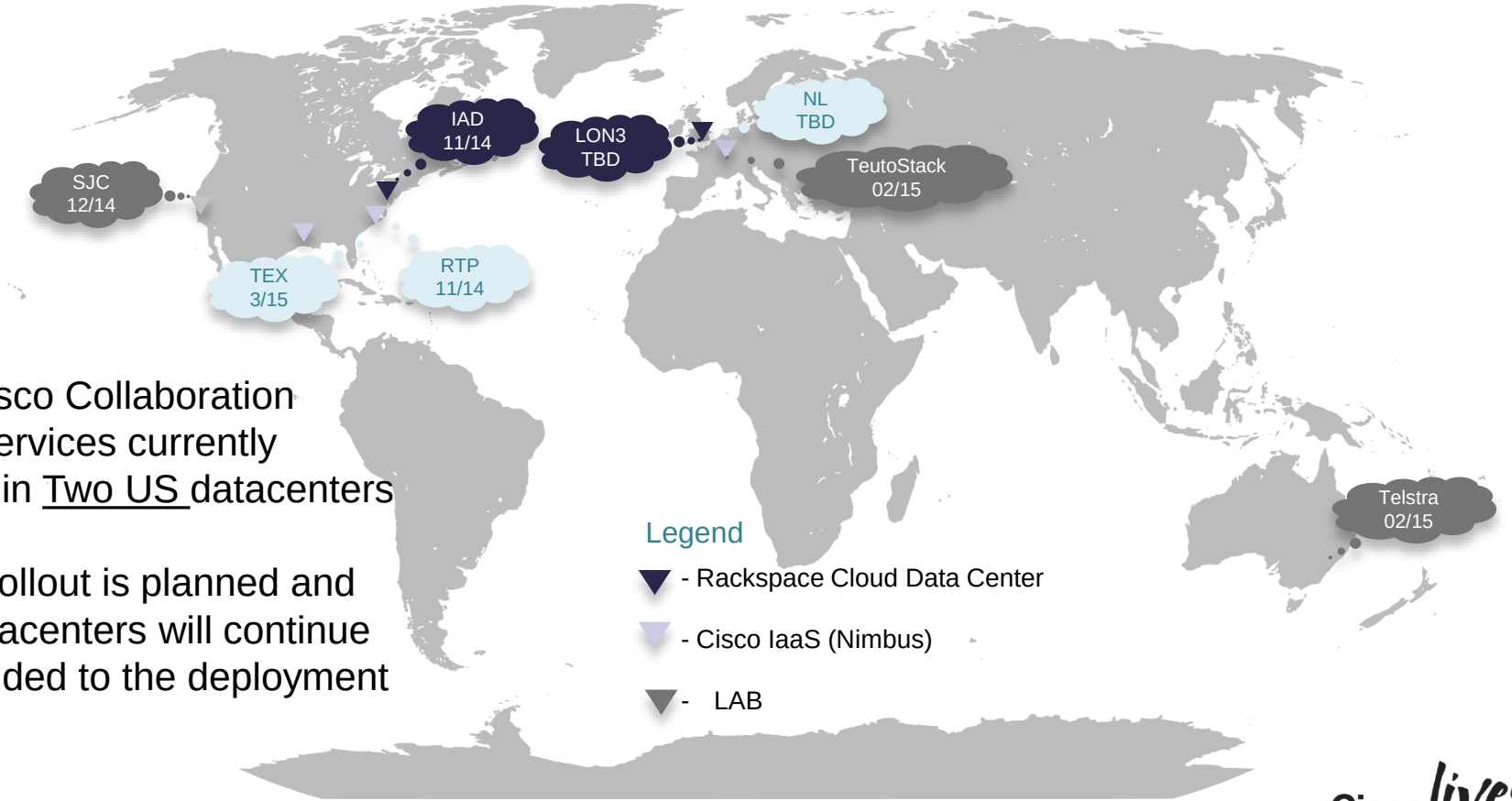
# Generally Available in North America and select markets




Core Cisco Collaboration Cloud services currently running in Two US datacenters

Global rollout is planned and new datacenters will continue to be added to the deployment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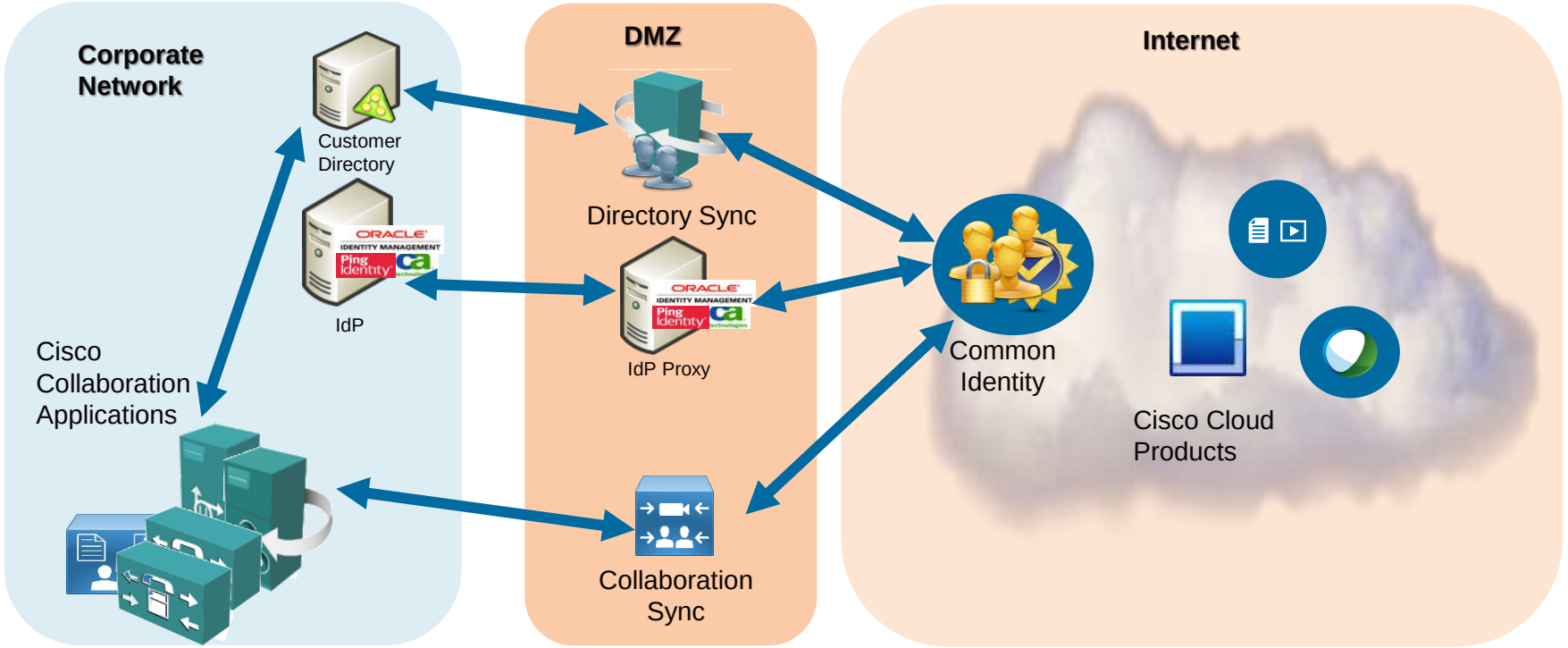
# Cisco Collaboration Cloud Solution – Common Identity

(WebEx will migrate to Common Identity in T30/T31 release)





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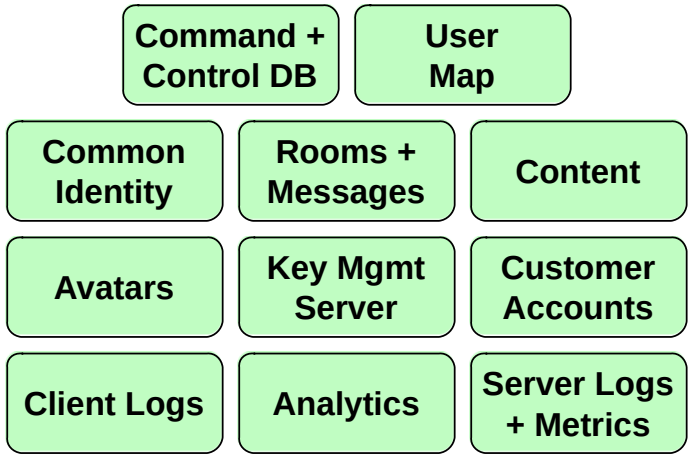
# Cisco Collaboration Cloud Security - Overall Approach

- Obfuscation of user identity as widely as possible
- End-to-end encryption of messages and content
- Granular access control
- Flexibility of data storage locations



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# Cisco Collaboration Cloud Security

| | | |
|---|---|---|
| **User Controls** | → | **Access Controls (Add/Remove participants in room)** |
| **Enterprise Security** | → | **Organisation-Defined & owned Encryption Keys & Policy Management** |
| **Secure Transport & Storage** | → | **TLS/AES E2E Encryption User Authentication** |
| **Application Security** | → | **Secure App Development Multi-tenancy features** |
| **Platform Security** | → | **Hardened Hosts Protected Networks** |
| **Physical Security** | → | **Data Centre Secure Facility** |

Enterprise Grade Security is IMPORTANT!

- Privacy & security of communication with *E2E* encryption
- Protecting intellectual property
- Preventing unauthorised communication
- Supervising and monitoring content, ethical walls*
- Compliance with legal discovery*


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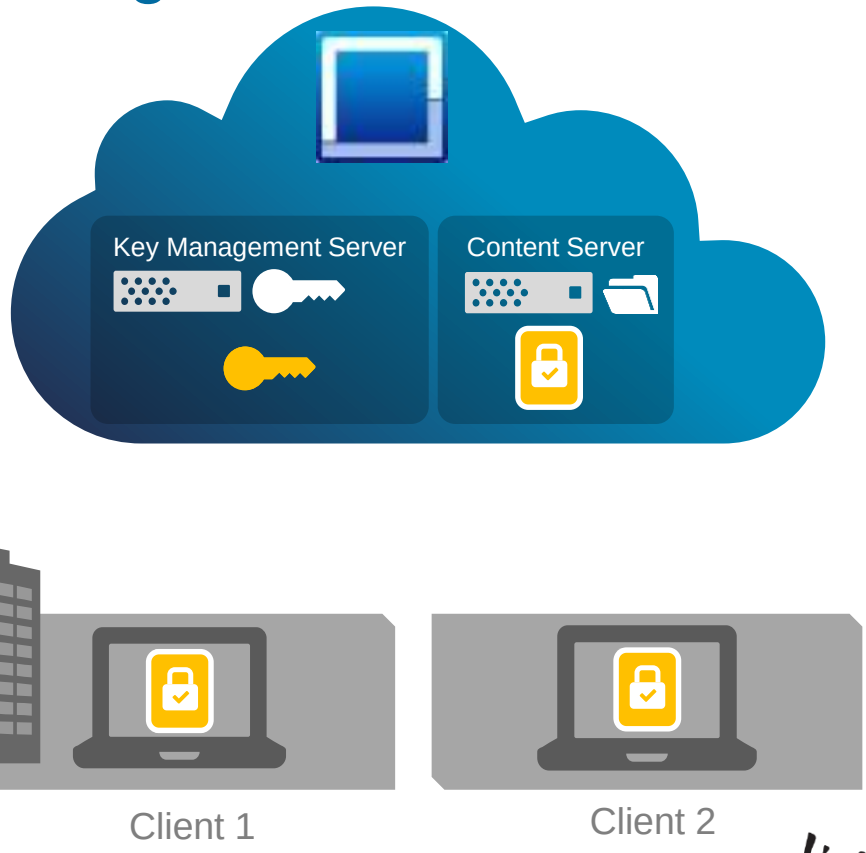
# Enterprise Grade Security – High Level

***Data in motion encryption:***
Encrypted signalling audio/video
HTTPS
Encrypted Media (sRTP/SRTP-EKT)

***Data at rest (Persistent Storage)***
Separate DB Stores KMS/Content
Stored Content – always fully encrypted

***End-To-End Encryption with AES-256GCM symmetric key:***
Ephemeral Keys - rotation
Encrypted Messaging
Encrypted Content
Encrypted Room Titles





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# Enterprise Grade Security – Key Rotation

- Key Management Server (KMS) manages keys.
- Signed ephemeral Elliptic curve Diffie–Hellman key exchange between client and KMS.
- KMS generates conversation keys and distributes them to conversation parties.
- Parties encrypt all payloads using AES-256. *(envelope is unencrypted)*
- “Squared” servers route based on the envelope.
- “Squared” servers archive everything *(in encrypted form)*

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# Key Management Service Architecture

https://tools.ietf.org/html/draft-abiggs-saag-key-management-service-00


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# Cisco Spark Team Collaboration

*(Formerly known as Project "Squared")*

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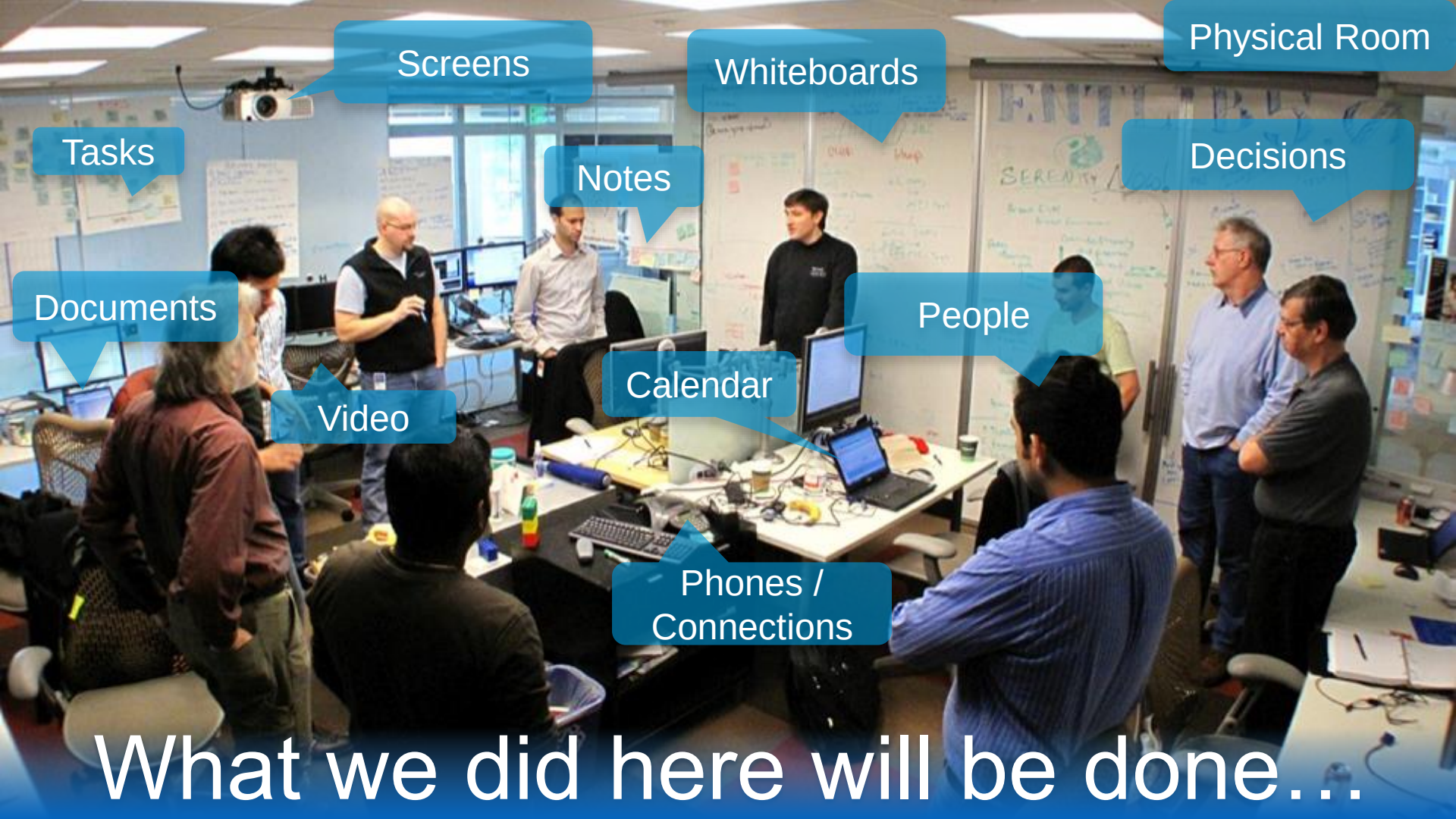
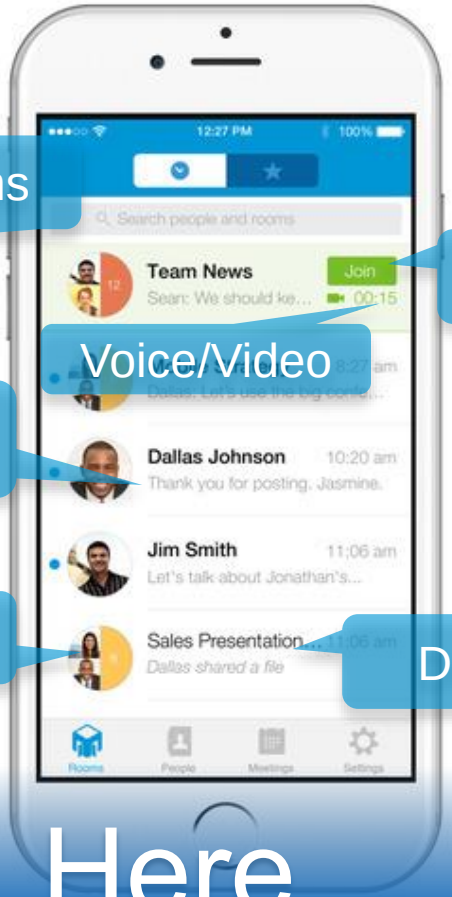
This is how we worked.




# What we did here will be done…

Welcome to the place
where your team works




Rooms

Screens / Sharing

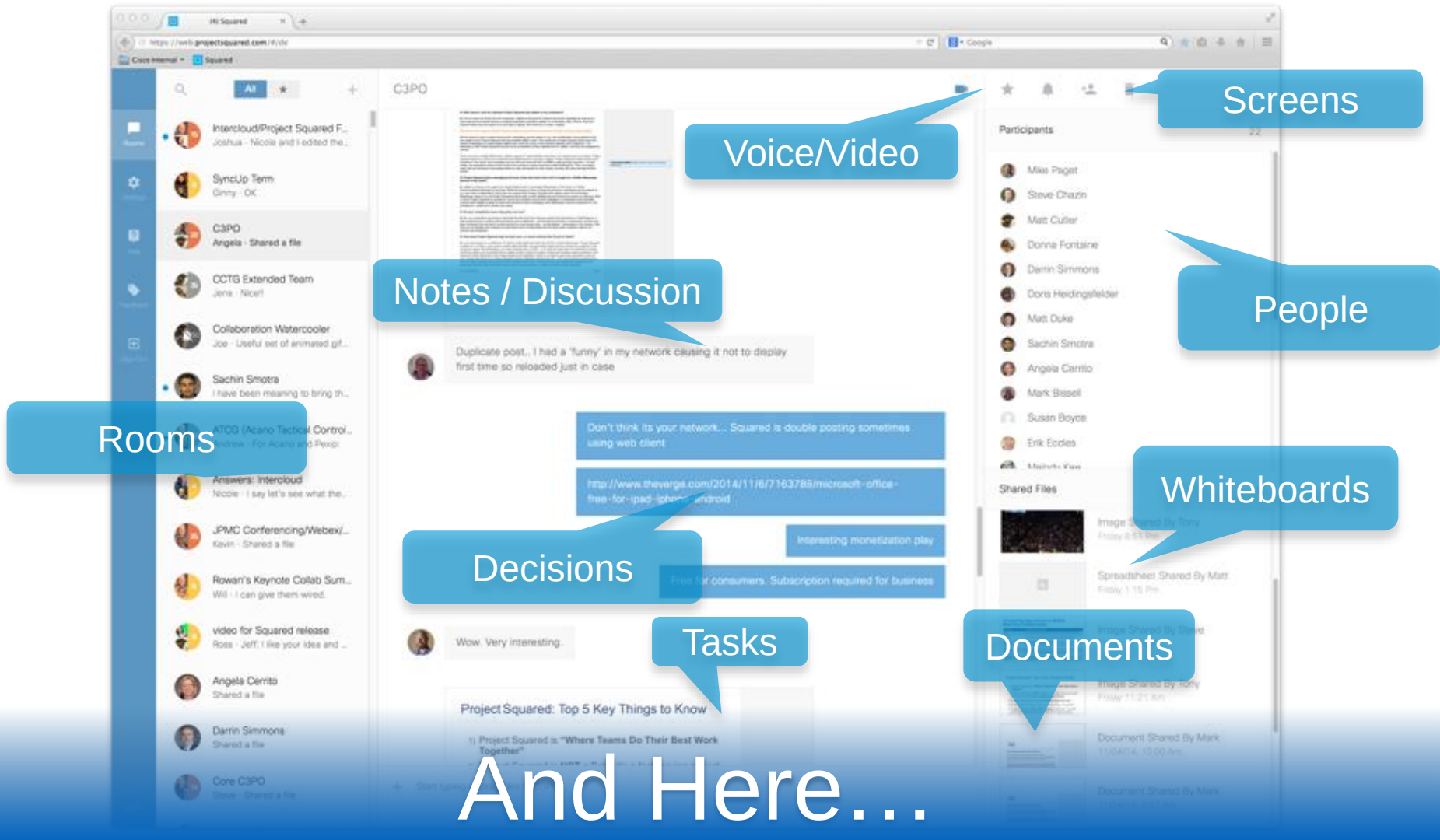
Voice/Video

Notes / Discussion

People

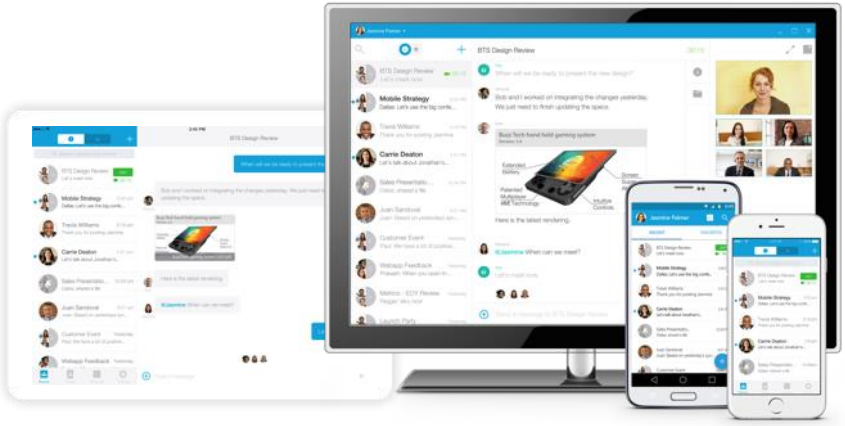
Documents

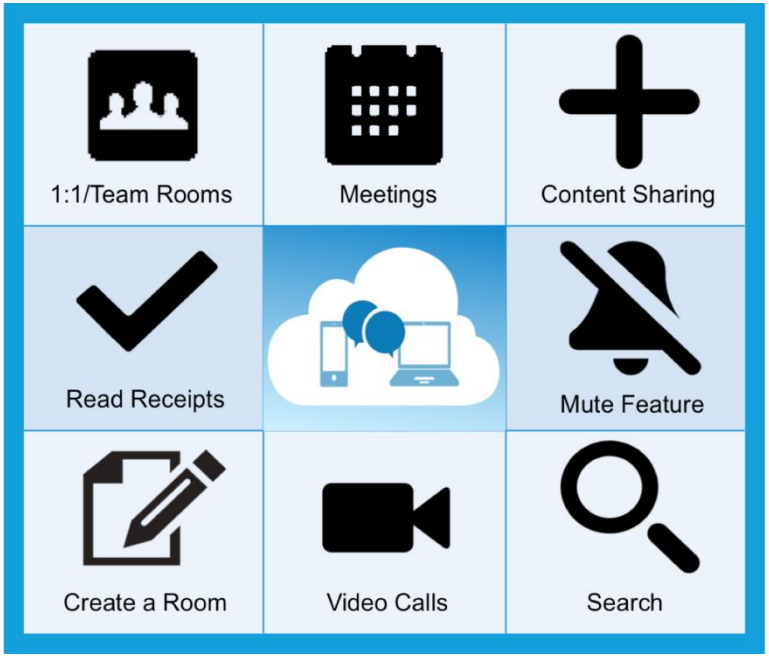
Here…


Screens
Voice/Video
Notes / Discussion
People
Rooms
Whiteboards
Decisions
Tasks
Documents
And Here…

# Introducing Cisco Spark

## Delivered from the Cisco Collaboration Cloud






http://download.ciscospark.com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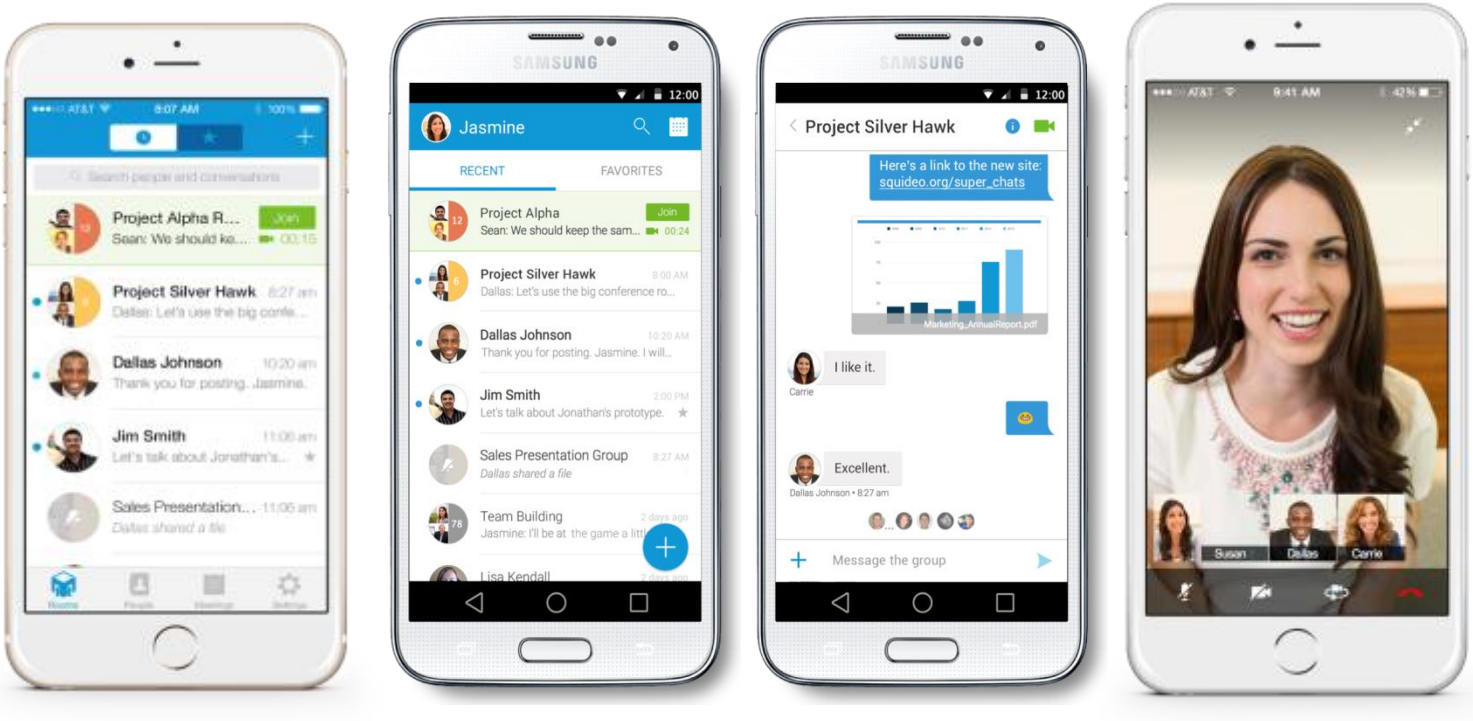
Cisco live!

# Cisco Spark: Work from Anywhere





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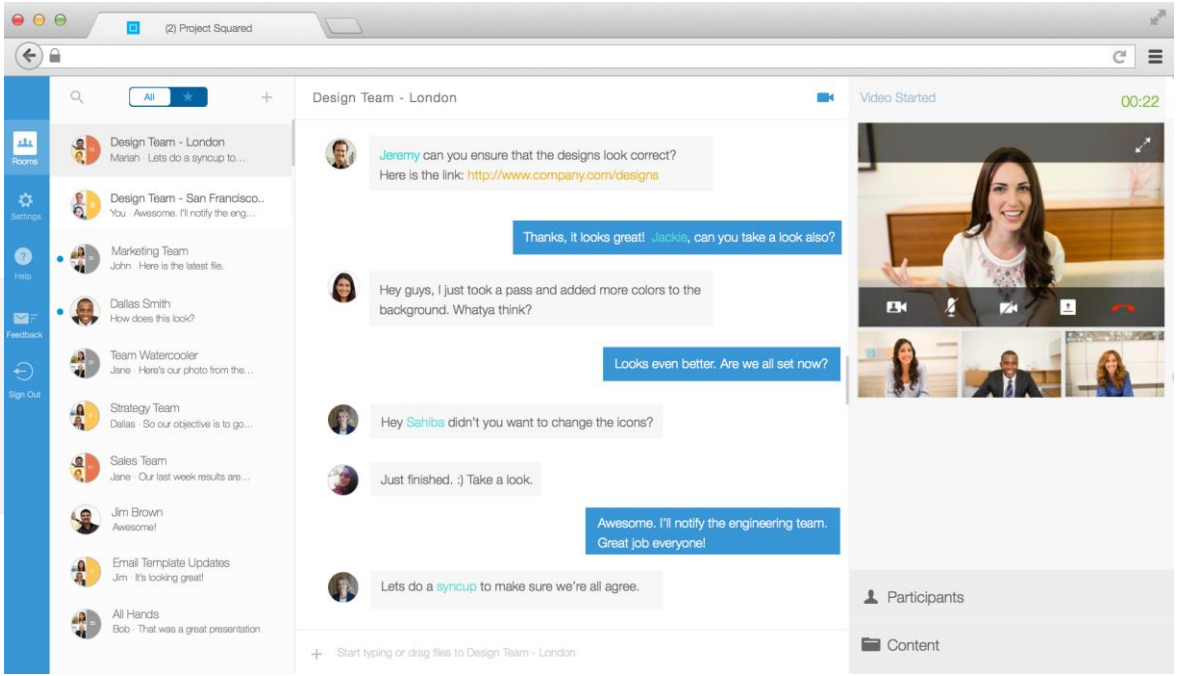
# Cisco Spark: Use the interface you have at hand…

Virtual Rooms
for Everyone





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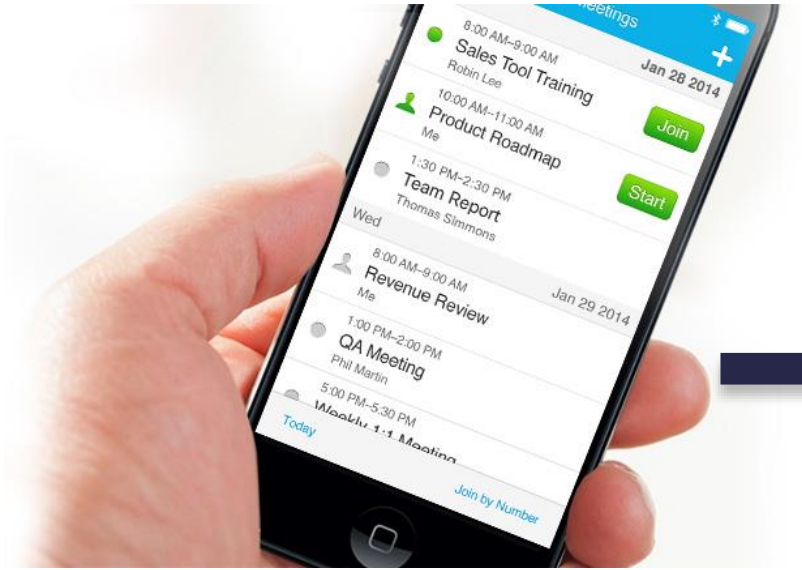
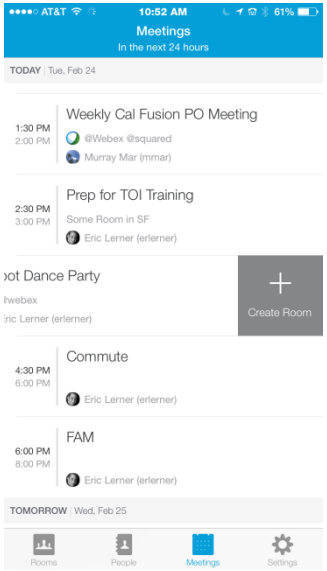
# Cisco Spark and WebEx integration - Meetings

- Project Squared Client x-launch WebEx app
- Create Room from Calendar “Slurp”







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# System Requirements

- iOS: Requires iOS 7.1 or later. Compatible with iPhone, iPad, and iPod touch. This app is optimised for iPhone 5, iPhone 6, and iPhone 6 Plus.
- Android: Requires 4.0.3 and above (Tablets not optimised, but working)
- Mac Client: Mac OSX 10.9 or higher
- Windows Client: Windows 7 or 8 (Windows Phone N/A for March GA)
- *No admin rights required for install after March GA (Mac/Win)*
- Web:

  Chrome: Latest two versions supported
  Internet Explorer: 10 and above (know issues with IE11)
  Safari: Latest two versions supported
  Firefox: Latest two versions supported (minimum version 33.1)
  *Recommended for the full video experience (WebRTC support)*

Check for the latest requirements @ https://support.ciscospark.com/


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# Global* General Availability of Cisco Spark

## Client & Admin Portal Localisation

- Chinese (Simplified)
- Chinese (Traditional)
- Czech
- Danish
- Dutch
- English
- English (UK)
- Finnish
- French
- German
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese (Brazilian)
- Spanish (Latin America)
- Spanish (Spain)
- Swedish
- Turkish

## Online Support Localisation

- Chinese (Simplified and Traditional)
- English (US)
- French
- German
- Japanese
- Korean
- Spanish (Latin America)

*** Available for March 18th, 2015 GA:**
**Australia, Canada, Denmark, France, Germany, Mexico, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, UK, USA,**


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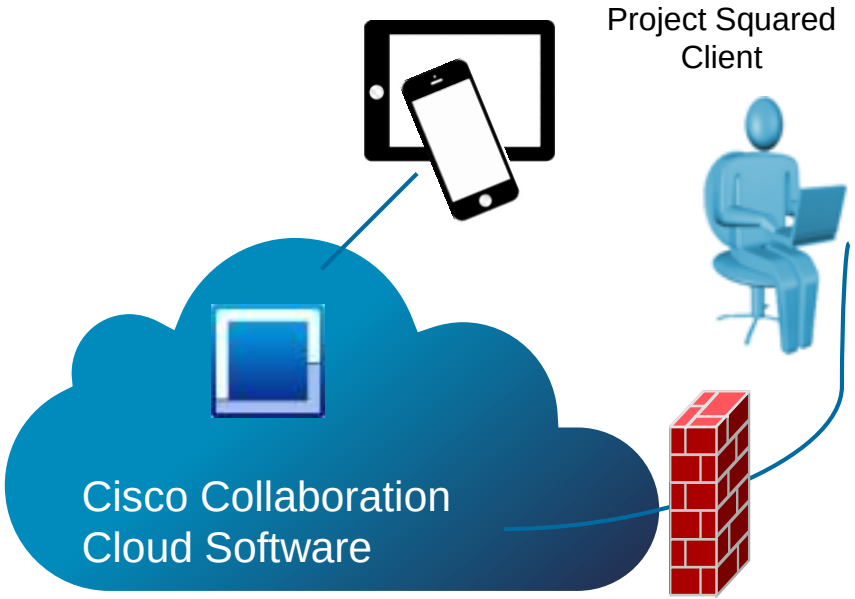
# Recommended Firewall Ports Settings

## Consider UDP over TCP traffic

| Functionality | Protocol | Port |
|---|---|---|
| Messaging | HTTPS | 443 |
| Notification | WSS | 443 |
| Call | HTTPS | 443 |
| Media (non-shared port) | RTP/SRTP over UDP | 33434 - 33598<br>8000-8100 |
| Media (non-shared port) | RTP/SRTP over TCP | 33434 - 33598<br>8000-8100 |
| Media (shared port) | RTP/SRTP over UDP | 33434 |
| Media (shared port) | RTP/SRTP over TCP | 33434 |

Note: No proxy support in March GA time frame




Single shared media port deployment with “ICE”
Use single port #33434 which is within existing dynamic range customers have enabled.
Media/Share go through that port. Tries UDP and falls back to TCP if needed.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# Preliminary Average Bandwidth Utilisation

| | Audio | Video | Share |
|---|---|---|---|
| **Codec** | **Opus** | **H264** | **H264** |
| Mobile | 50kbps<br>capped at 64kbps max | 360p @30fps max resolution<br>700kbps capped at 1.0 Mbps max | 1080p @5fps max<br>150kbps-1.5Mbps max depending on content |
| Desktop | 50kbps<br><br>150 kbps for Mac/ Win Receive<br>(local mixing with top 3 participants) | 720p @30fps max resolution<br>1.5Mbps capped at 1.5 Mbps max<br><br>Note: During poor network conditions, the video stream may be disabled | 1080p @5fps max<br>150kbps-1.5Mbps max depending on content |

Project Squared is using optimised WME, bandwidth profile is similar to WebEx client experience in CMR type meeting. Currently only desktop sharing is supported (no annotation or application sharing), Audio codec supported with WME is Opus


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# Cisco Spark User Account Management Options

| Option | Description |
|---|---|
| Manual through Org Admin | • Admin can use Org Admin to manually create/update user accounts |
| User Invite (side-board) | • Cisco Spark User can invite another user to use Cisco Spark |
| Directory Integration<br>MSFT 2003/2008 R2 supported | • automatic method for creating, updating and deactivating user accounts and groups.<br>• Customer or Partner enables AD integration via Admin Portal |
| Single Sign-On | • SSO can be configured to automatically create account with AD integration or simply to be used for authentication only<br>• SP initiated integration only (no IdP initiated support) |

Note: For March GA user administration and management must be done in two places, WebEx user integration in Admin portal scheduled in T30 release.


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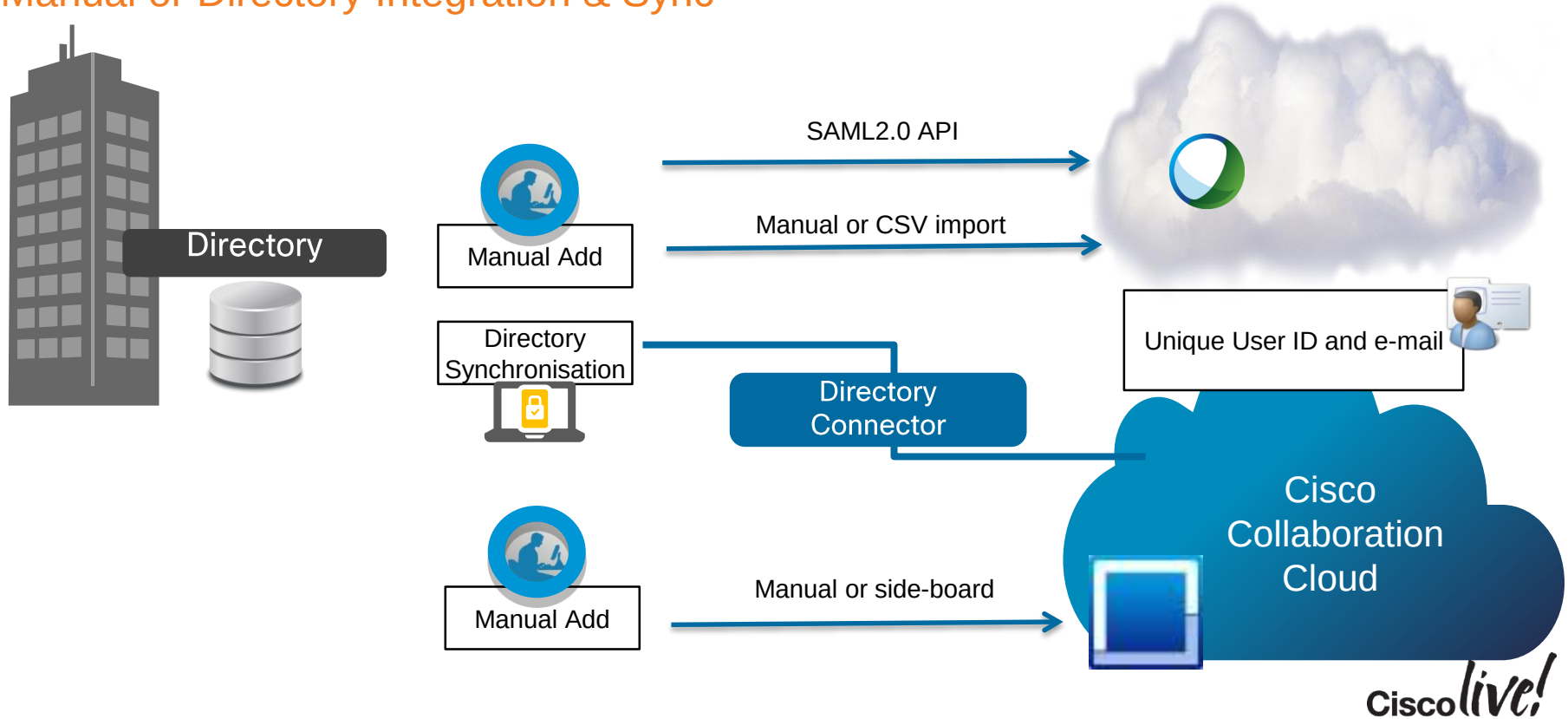
# Cisco Spark User Provisioning

## Manual or Directory Integration & Sync





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# Cisco Spark Demo

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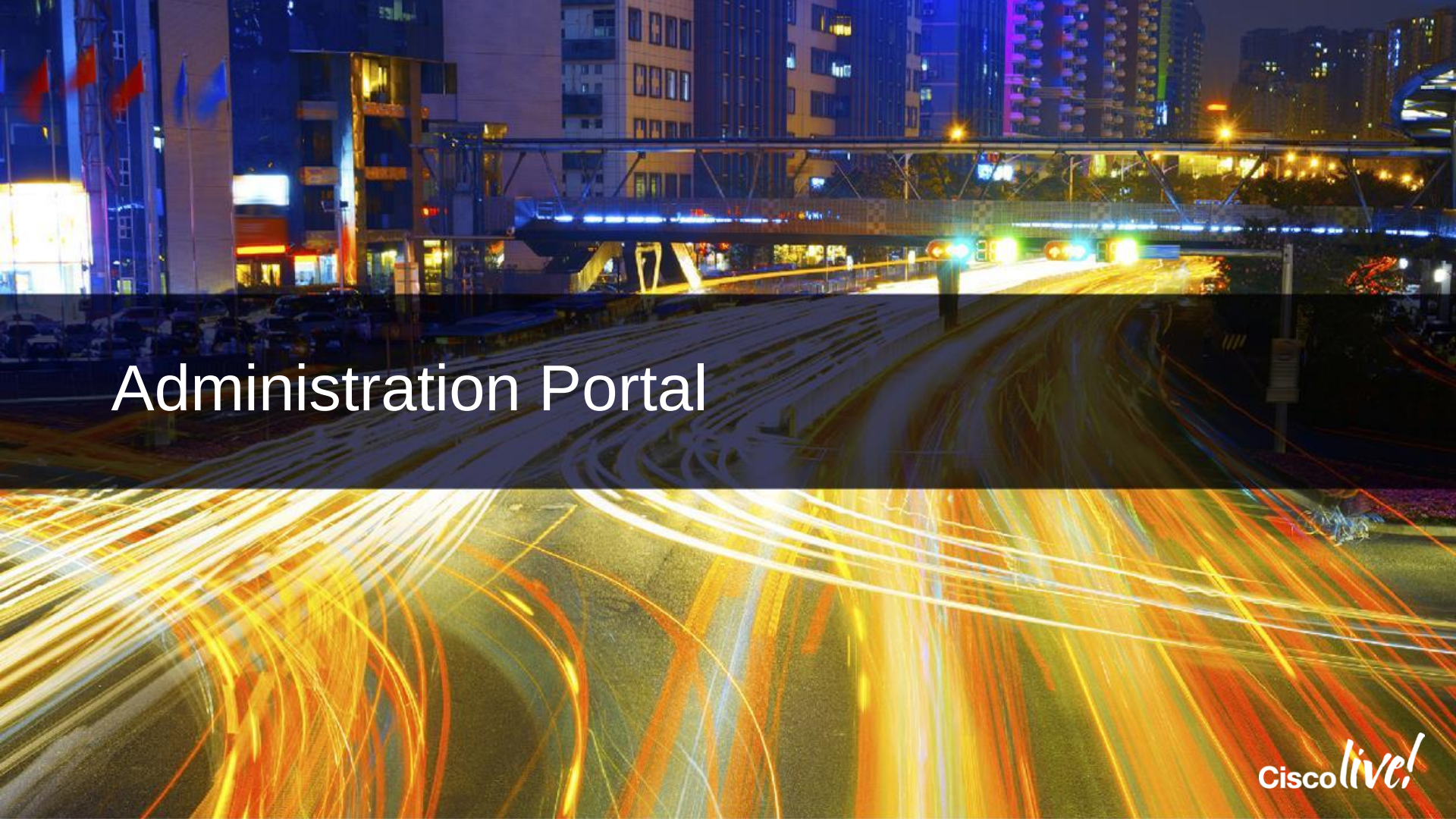
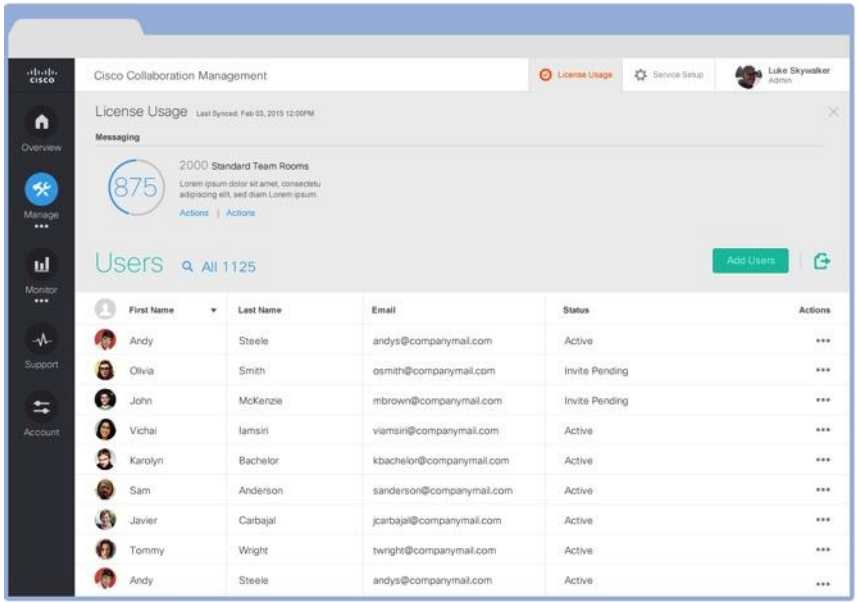
# Administration Portal



# Management Portal

## Single Pane of Glass for Partners and IT Administrators




- Easy User Onboarding
- Enterprise Single Sign-on
- Sync with On-Premise Directory Service
- Role Based Access
- Analytics & Metrics
- User, Group & License Management
- **Partners:** Simply Launch Trials and Manage Accounts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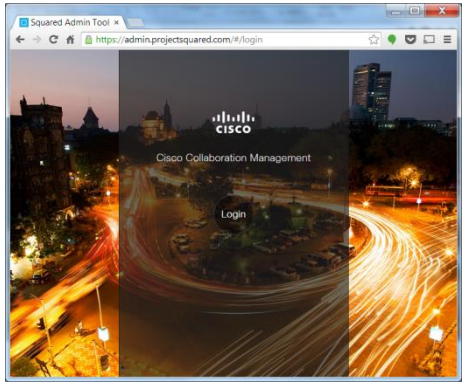
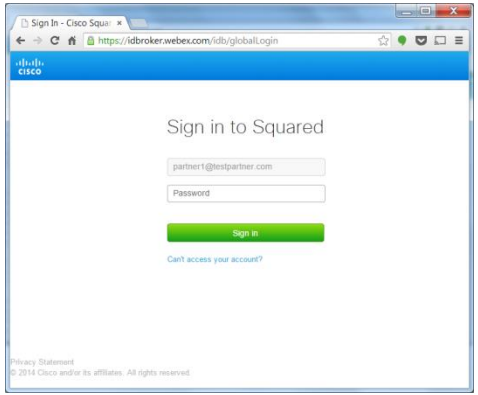
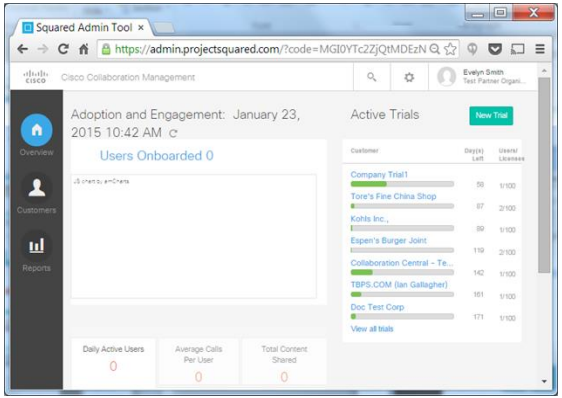
# Admin Portal – Landing Page (Partner) https://admin.ciscospark.com




Partner

- Access Customer Admin Console
- Starting a Project Squared Trial for Customer
- Reviewing/Modifying Customer's Info
- Manage Customer Trial or Provide Site Administration Service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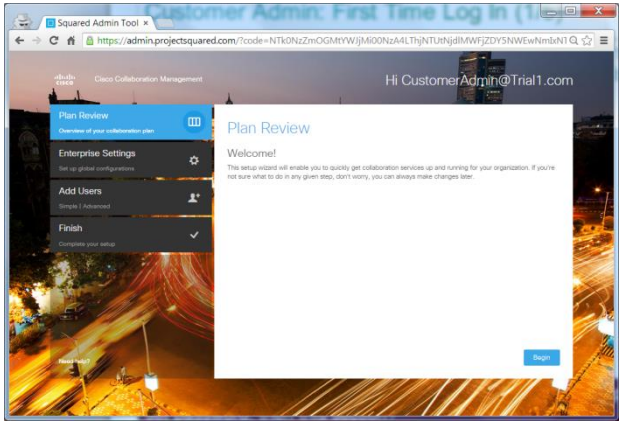
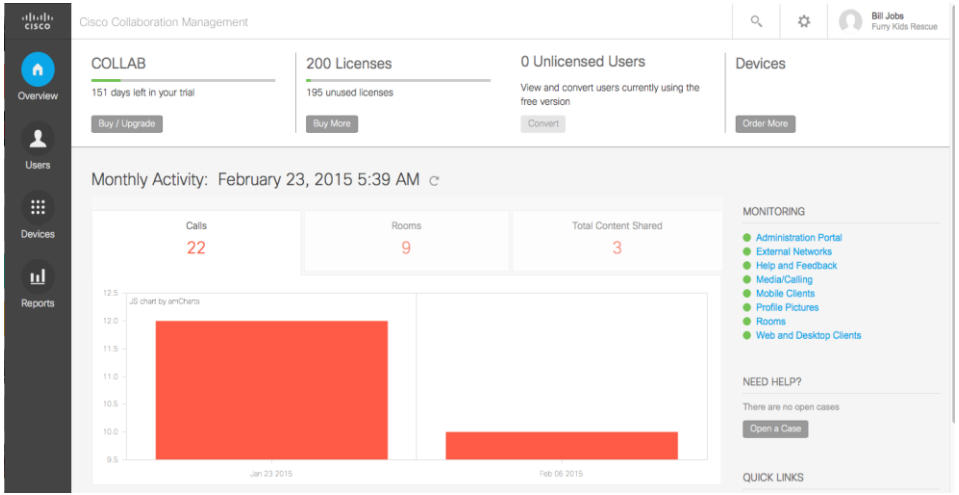
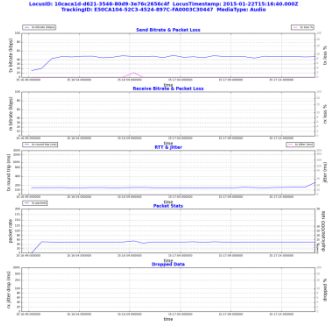
# Admin Portal – Landing Page (Org Admin) https://admin.ciscospark.com

Customer Admin Console

- Create Project Squared Account
- Status Page Quick Access
- SSO configuration
- Reports & Analytics
- Support & Logs



```
[Checking]audio_statsfound: times=82

parsing order in file st_mtime:
/usr/local/tools/debug-tools/integration_tool_ws/ws_temp/logs.txt 1970-01-17 11:40:08.058093
/usr/local/tools/debug-tools/integration_tool_ws/ws_temp/logs.txt
Error in timestamp format:  [Audio][Video][ScreenShare] cid__114 this=0x12ffdf200

parsing order in file st_mtime:
/usr/local/tools/debug-tools/integration_tool_ws/ws_temp/logs.txt 1970-01-17 11:40:08.058093
/usr/local/tools/debug-tools/integration_tool_ws/ws_temp/logs.txt
Traceback (most recent call last):
  File "logparser.py", line 840, in <module>
    process_logpath(logpath)
  File "logparser.py", line 450, in process_logpath
    ww2_callstats.analyze()
  File "/usr/local/tools/debug-tools/calling/wme/logtool/callstats.py", line 208, in analyze
    self.tx_audio_callstats.audio_module.analyze()
  File "/usr/local/tools/debug-tools/calling/wme/logtool/audiolog.py", line 219, in analyze
    self.audio_tx_plot()
  File "/usr/local/tools/debug-tools/calling/wme/logtool/audiolog.py", line 250, in audio_tx_plot
    self.get_title_with_viewid('audio_tx_metrics_and_degrading_quality'), annotation_list=annotation_list)
  File "/usr/local/tools/debug-tools/calling/wme/logtool/utils.py", line 592, in show_metrics_events
    fig, axes = plt.subplots(numrows, numcols, sharex=True)
  File "/usr/local/lib/python2.7/site-packages/matplotlib-1.3.1-py2.7-linux-x86_64.egg/matplotlib/pyplot.py", line 1046, in subplots
    fig = figure(**fig_kw)
  File "/usr/local/lib/python2.7/site-packages/matplotlib-1.3.1-py2.7-linux-x86_64.egg/matplotlib/pyplot.py", line 423, in figure
    **kwargs)
  File "/usr/local/lib/python2.7/site-packages/matplotlib-1.3.1-py2.7-linux-x86_64.egg/matplotlib/backends/backend_tkagg.py", line 79, in new_figure_manager
    return new_figure_manager_given_figure(num, figure)
  File "/usr/local/lib/python2.7/site-packages/matplotlib-1.3.1-py2.7-linux-x86_64.egg/matplotlib/backends/backend_tkagg.py", line 87, in new_figure_manager_given_figure
    window = Tk.Tk()
  File "/usr/local/lib/python2.7/lib-tk/Tkinter.py", line 1745, in __init__
    self.tk = _tkinter.create(screenName, baseName, className, interactive, wantobjects, useTk, sync, use)
_tkinter.TclError: no display name and no $DISPLAY environment variable
```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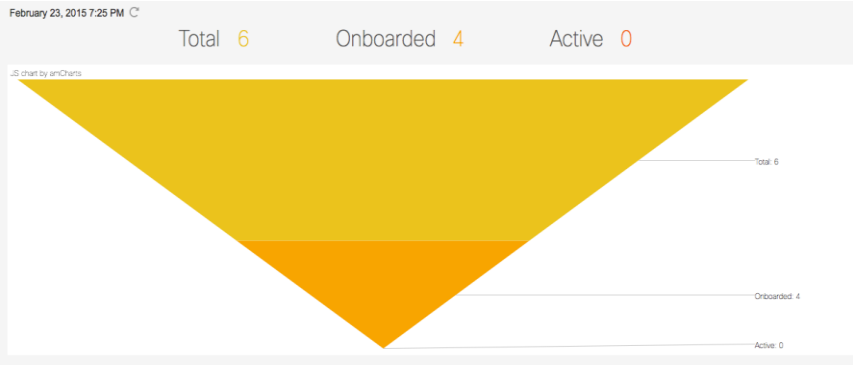
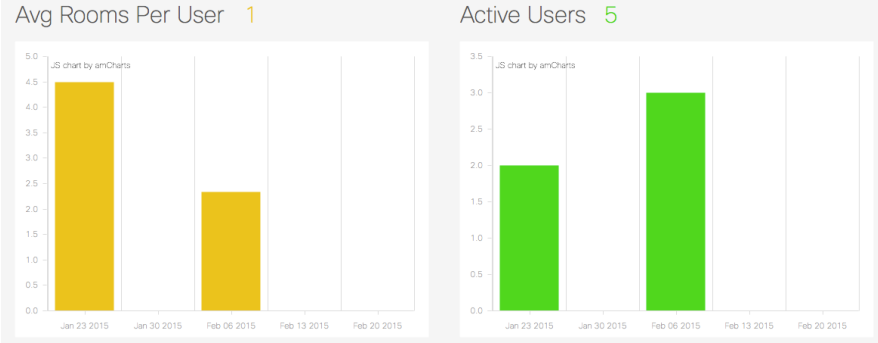
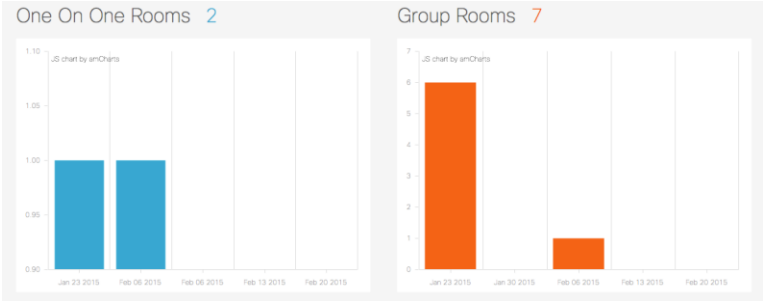
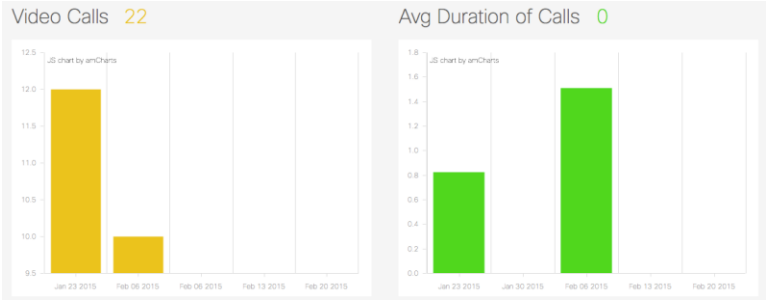
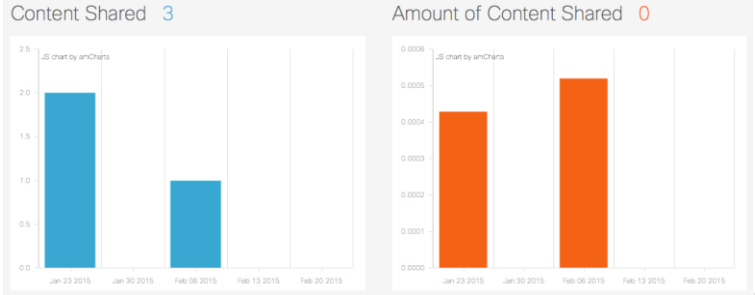
# Admin Portal – Reports





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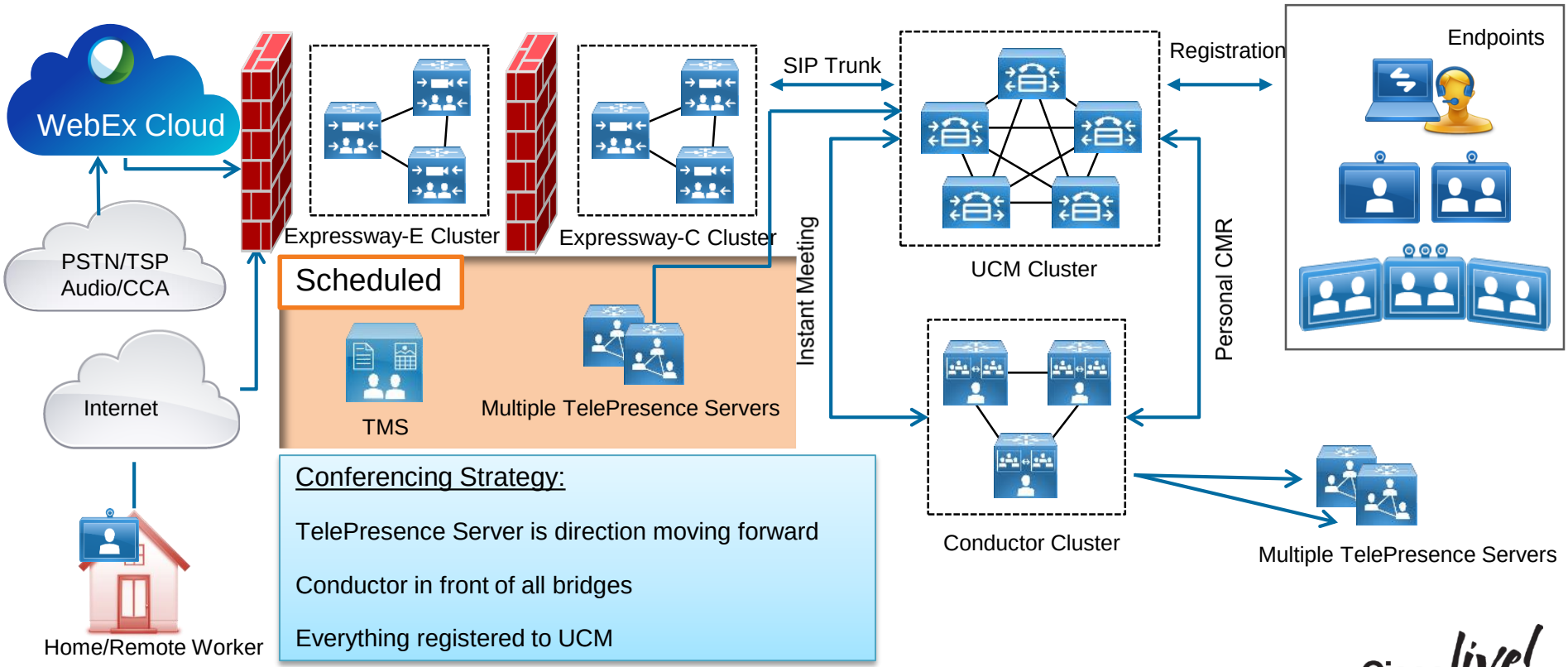
Hybrid Cloud Collaboration Today

# CMR Hybrid Cloud Architecture

## Recommended Deployment





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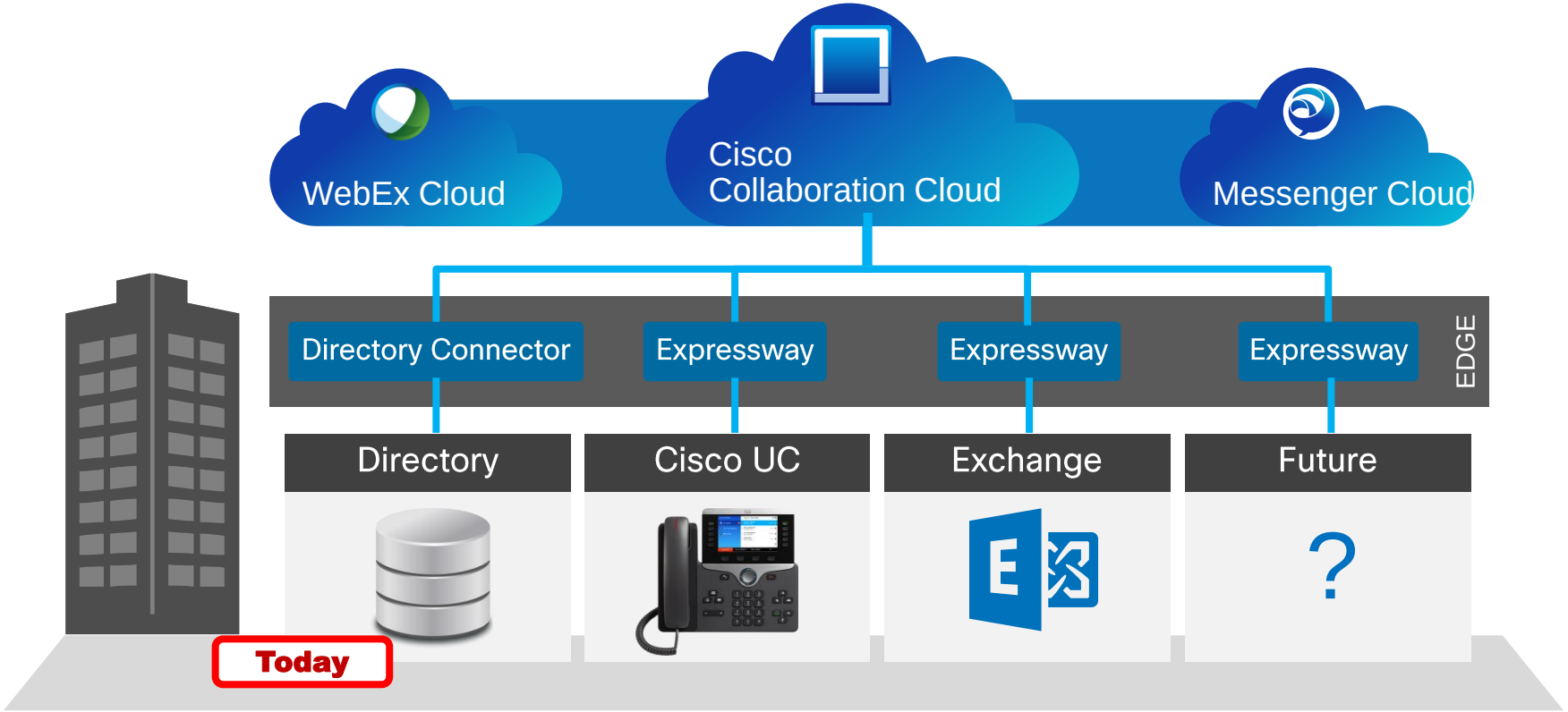
Future…The Fusion of On-Prem and Cloud

# Fusion … Integrating Premise and Cloud





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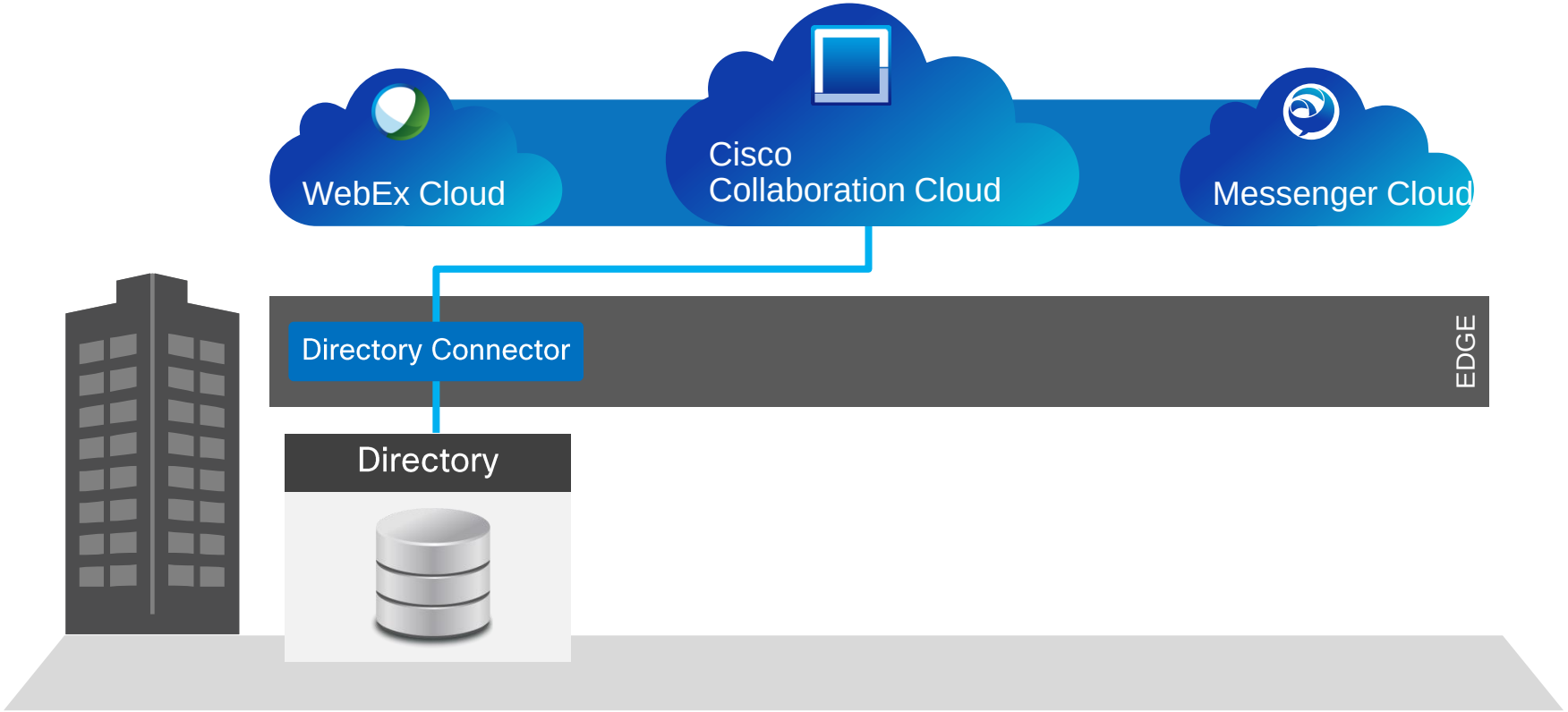
# Fusing Directory





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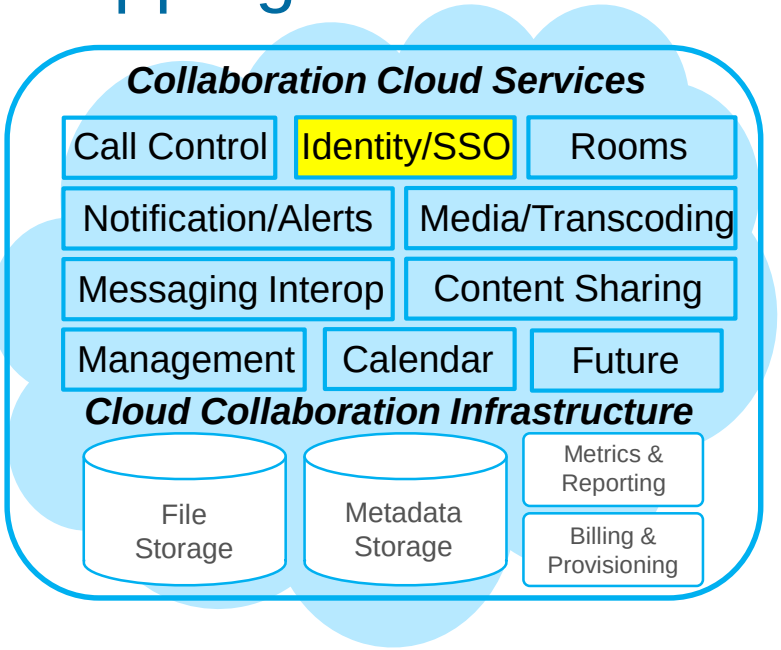
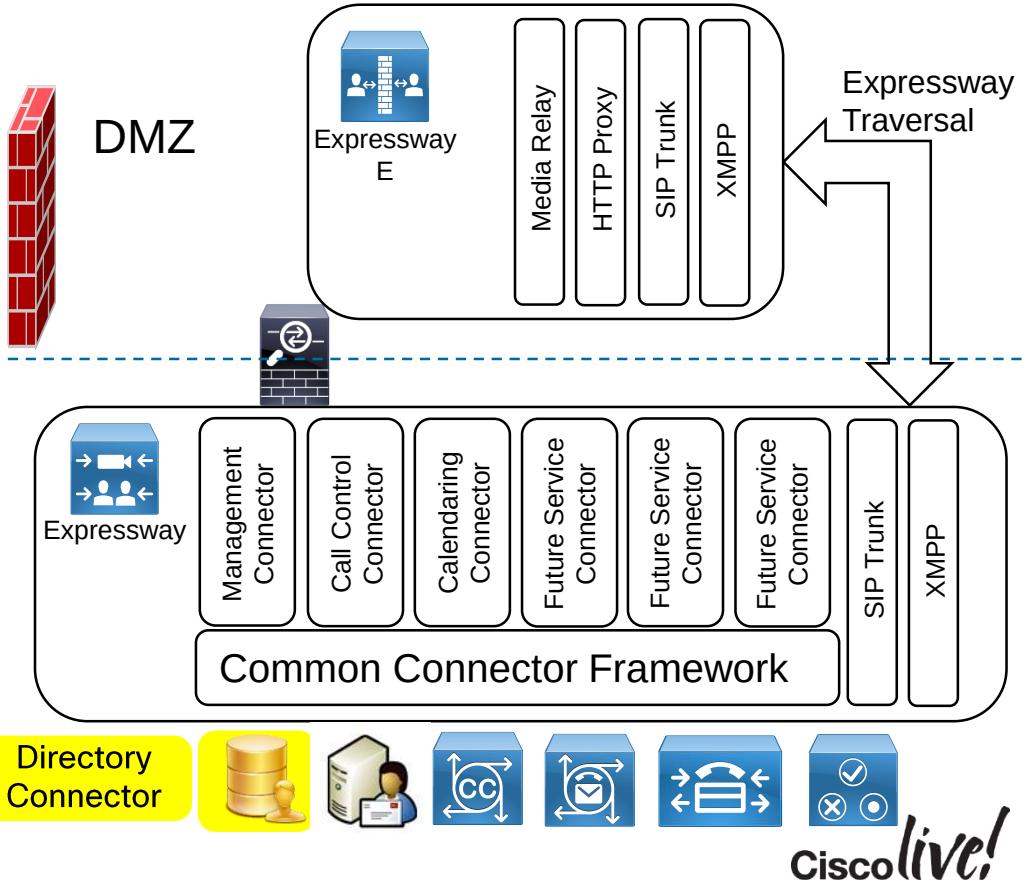
# Mapping Users in AD via Directory Connector





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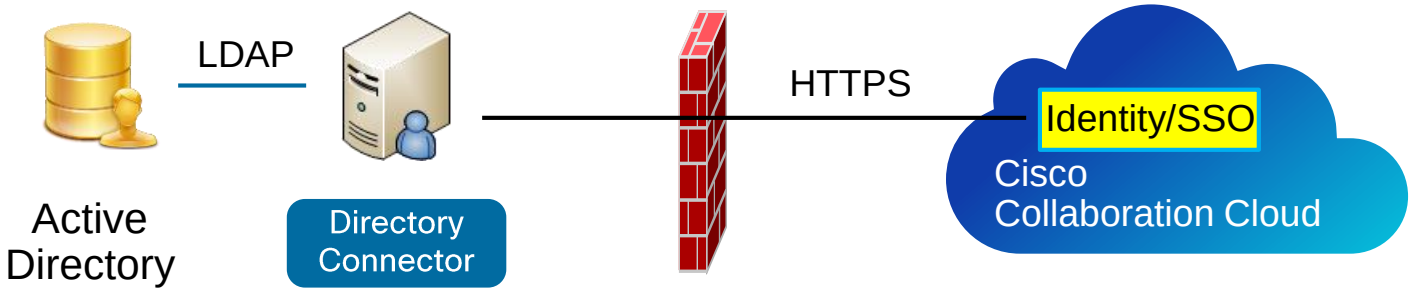
# Provisioning via Directory Connector




- Infrastructure for premise directory synchronisation to Common Identity cloud services (CIS)
- Customer installs Directory Connector in its network on a Windows Domain server
- Customer configures Directory Connector to specify its AD synchronisation information
- Directory connector integrates with AD to retrieve user information and syncs with CIS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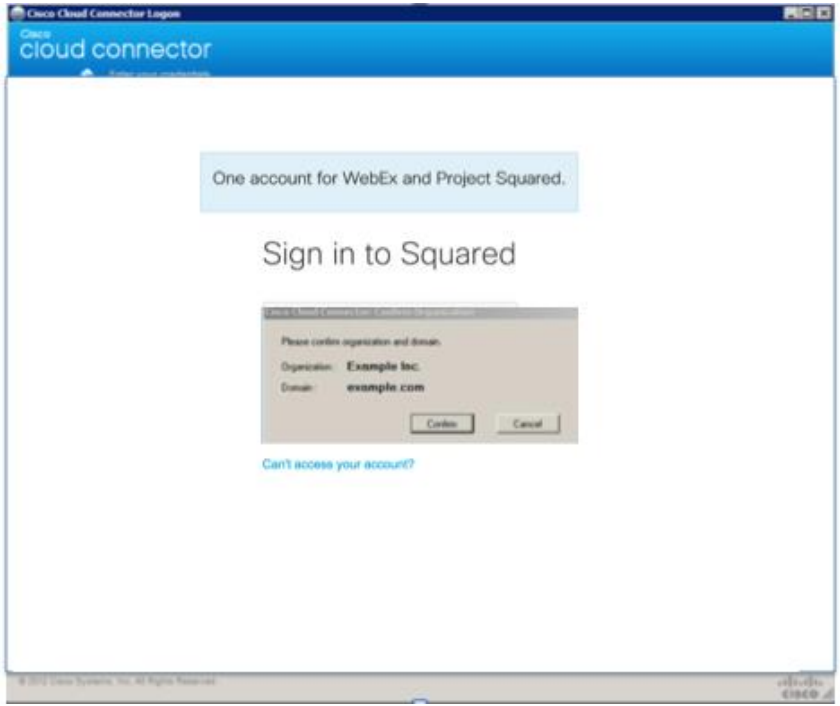
# Cisco Cloud (DirSync) Connector

Cisco Cloud Connector

**Subject to Change**



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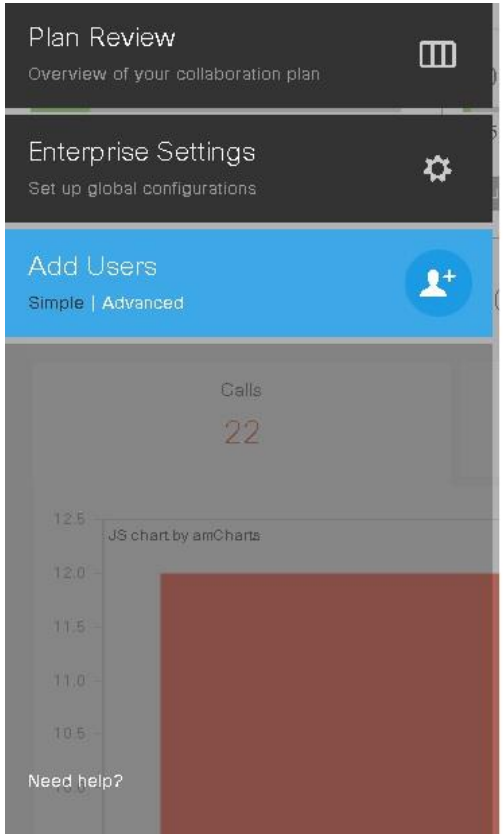
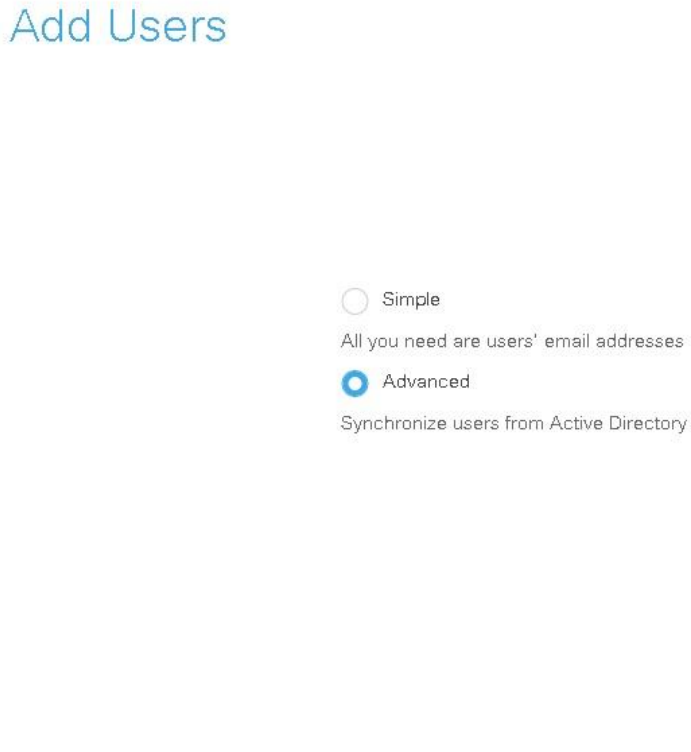
# Admin Portal DirSync User Configuration

**Subject to Change**





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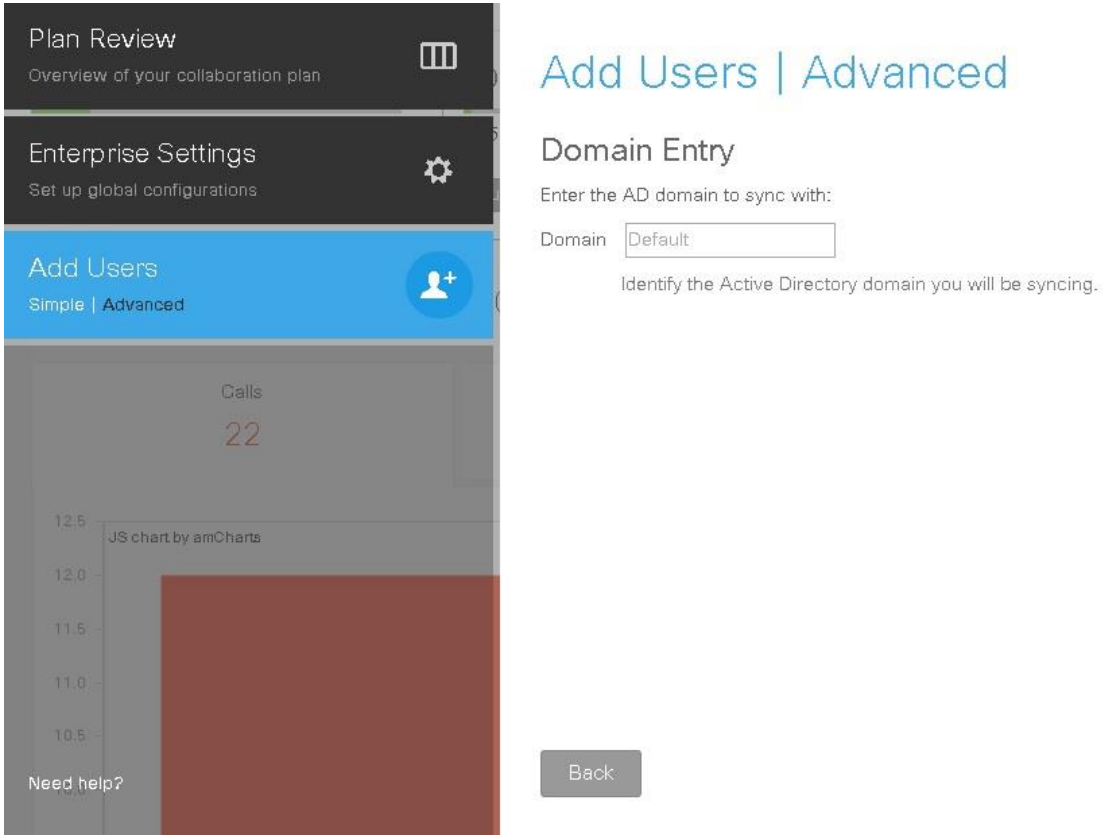
# Admin Portal DirSync AD Domain

**Subject to Change**





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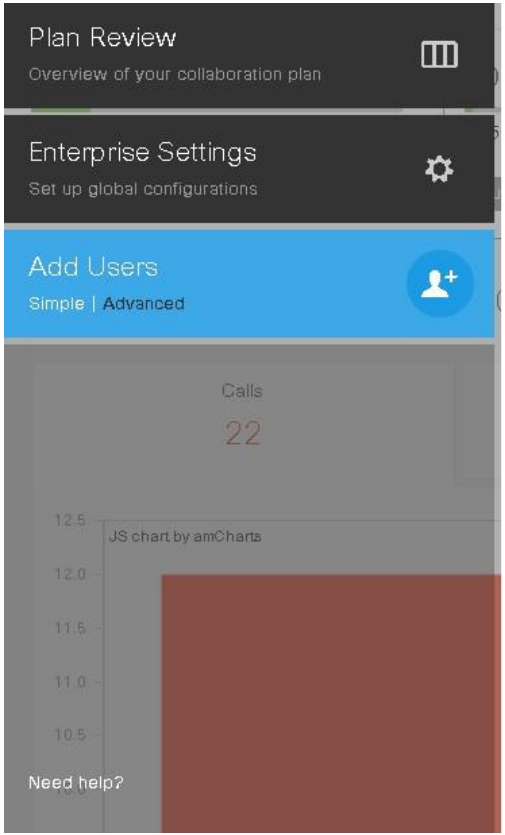
# Admin Portal Connector Installation

**Subject to Change**




## Add Users | Advanced

### Install Cloud Connector

Follow these steps in order to install the Cloud Connector:

1. Download and Install the Cisco Cloud Connector in your enterprise.
2. Configure the Active Directory synchronization agreement.
3. Test the synchronization agreement.

Press the Next button when you're ready to verify that identity information is being synchronized.

Back

Next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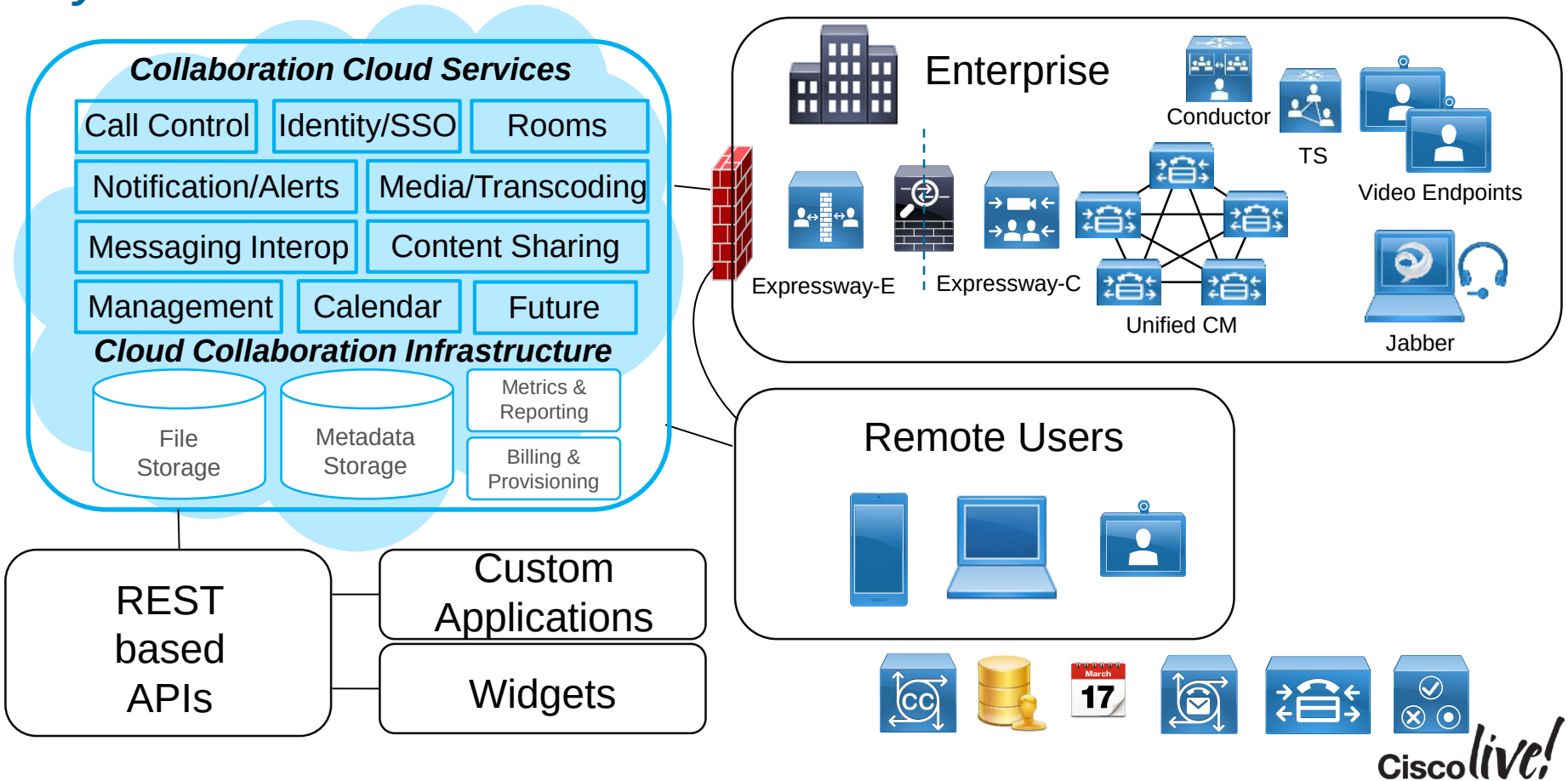
# Hybrid Cloud





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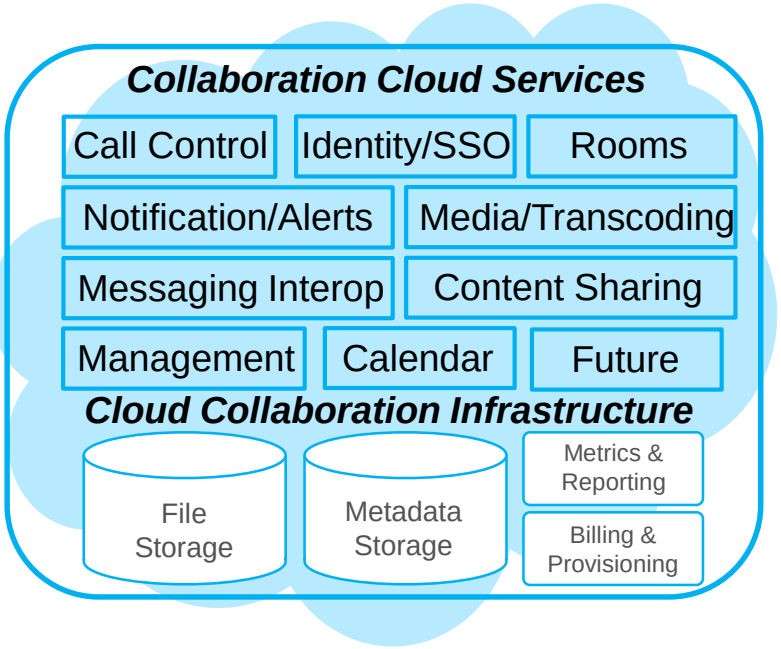
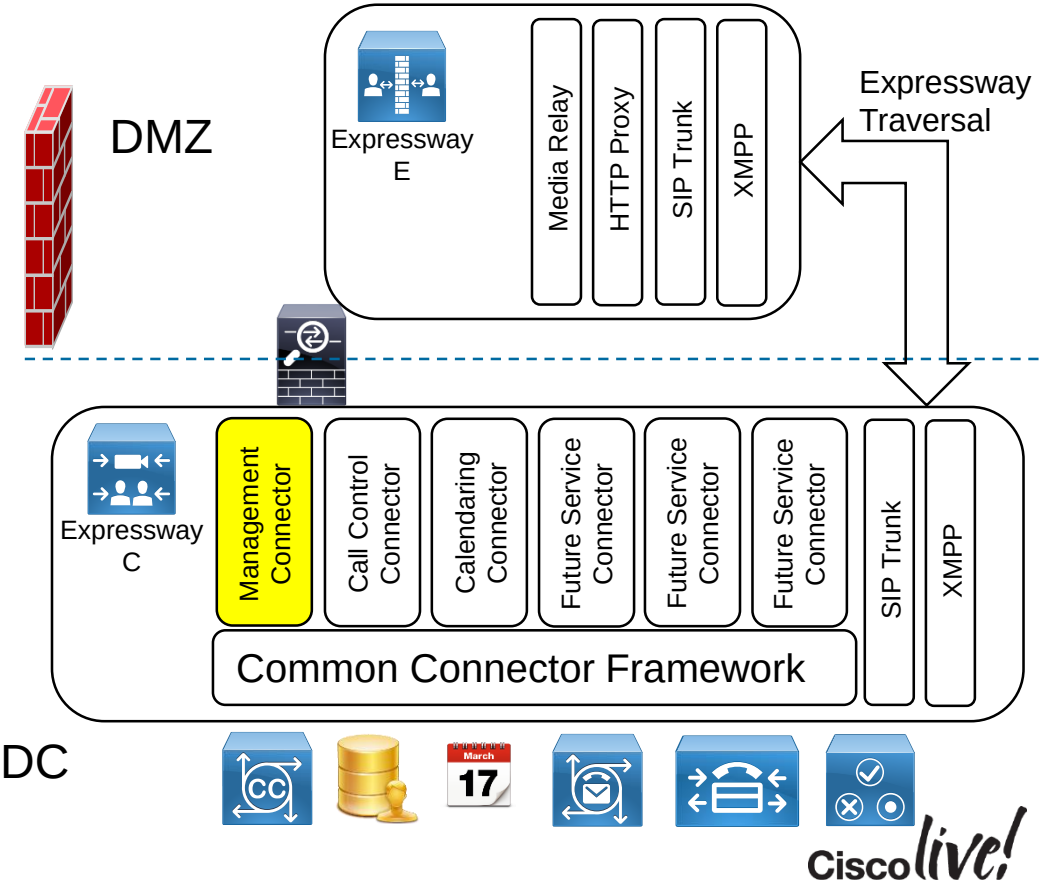
# The Edge – Expressway





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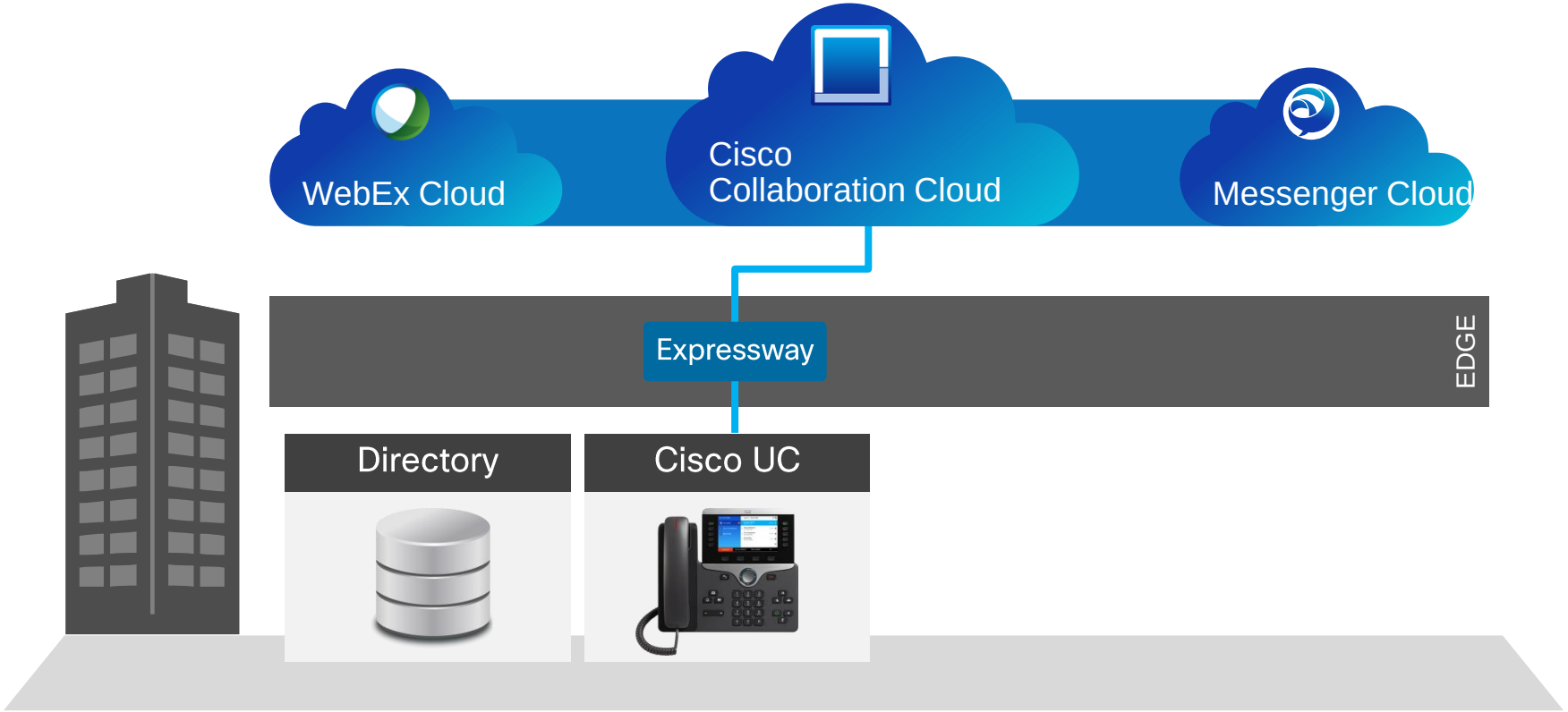
# Fusing Unified Communications





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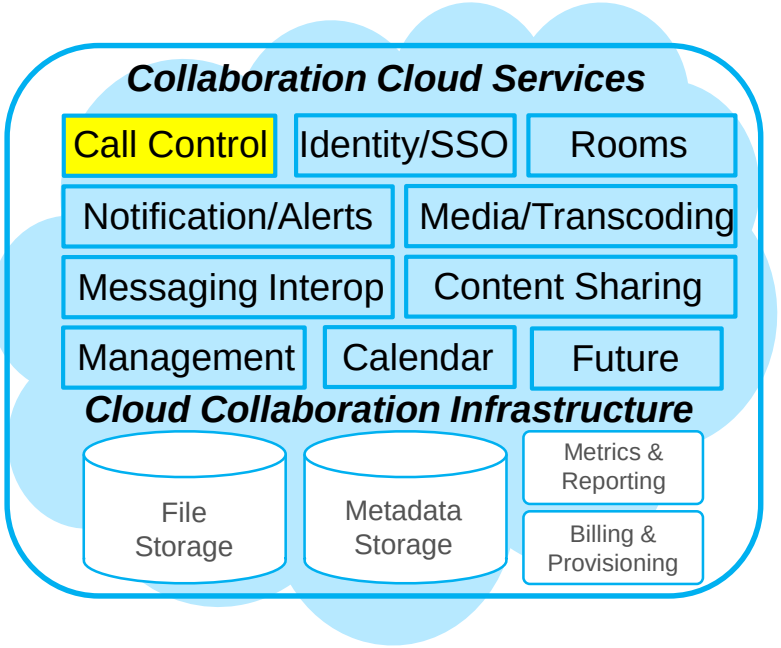
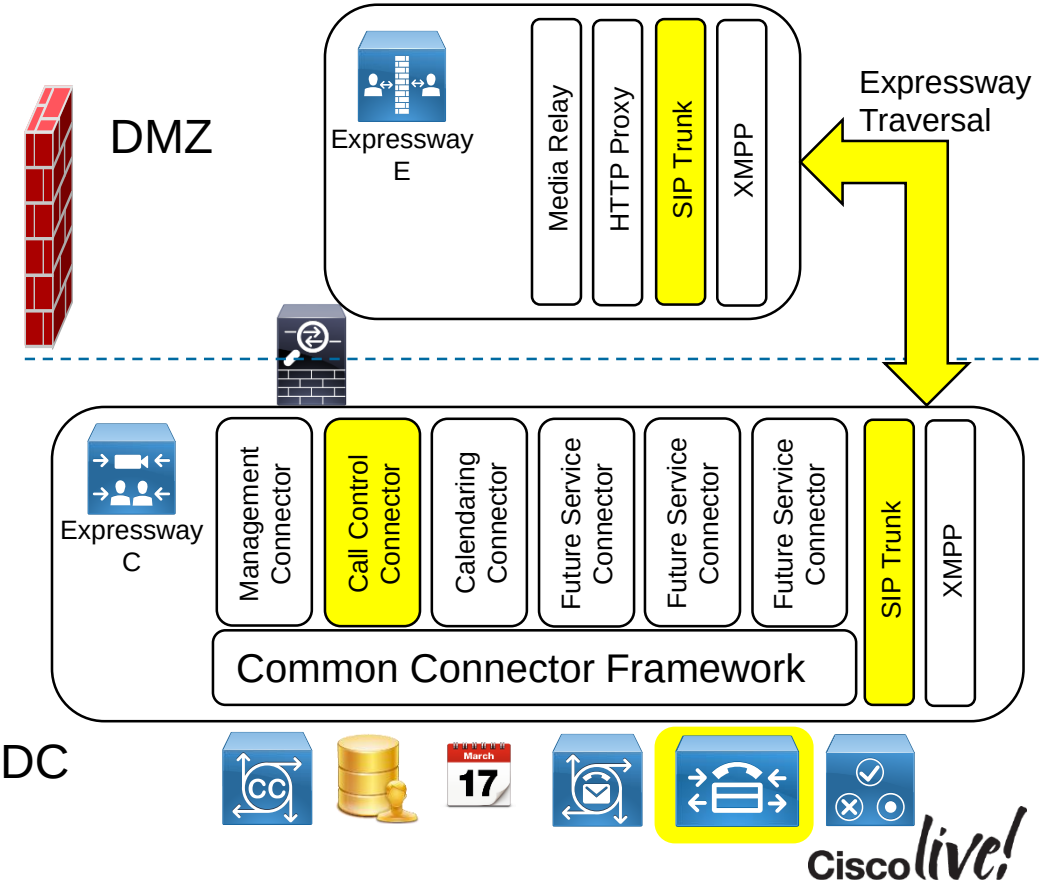
# Fusing Cloud and Premise Calling





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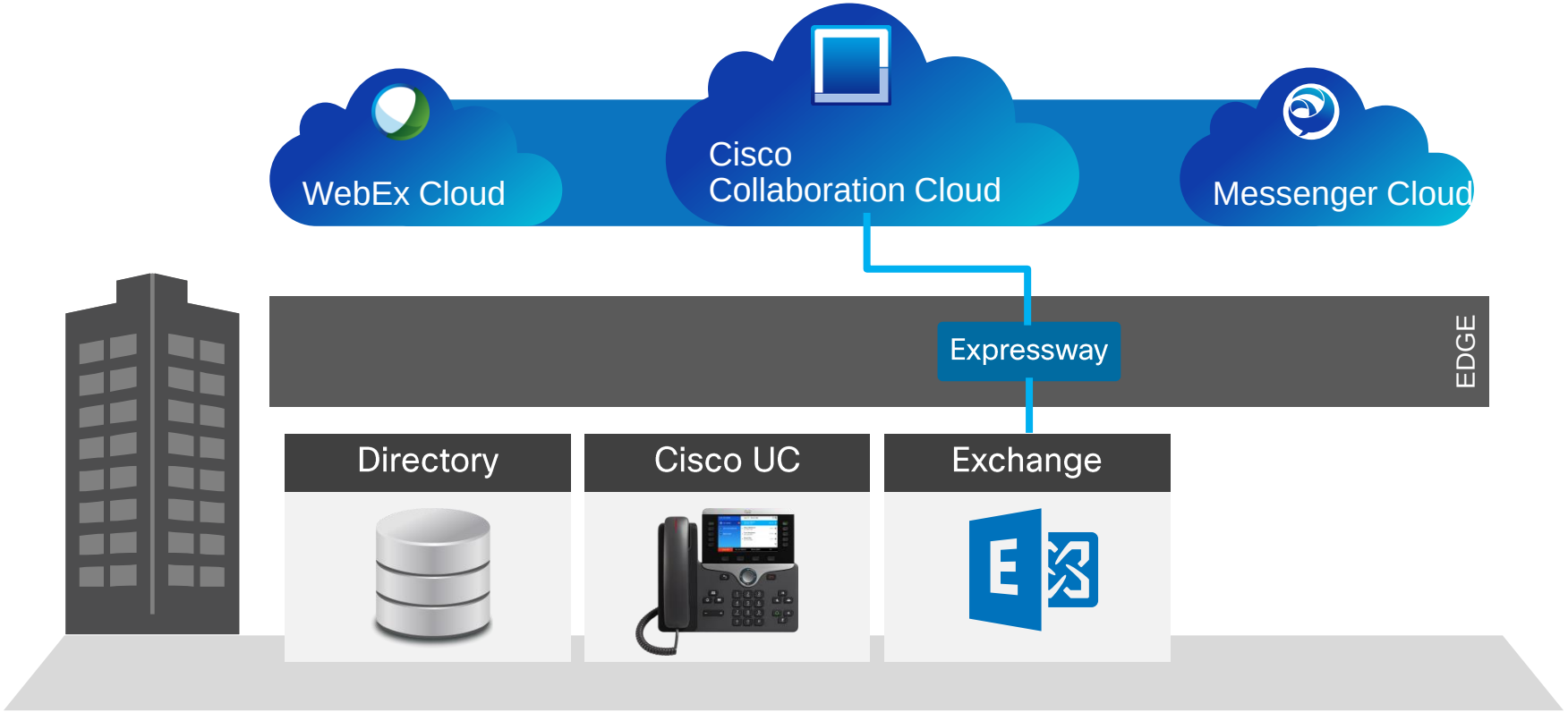
# Fusing Exchange Calendar





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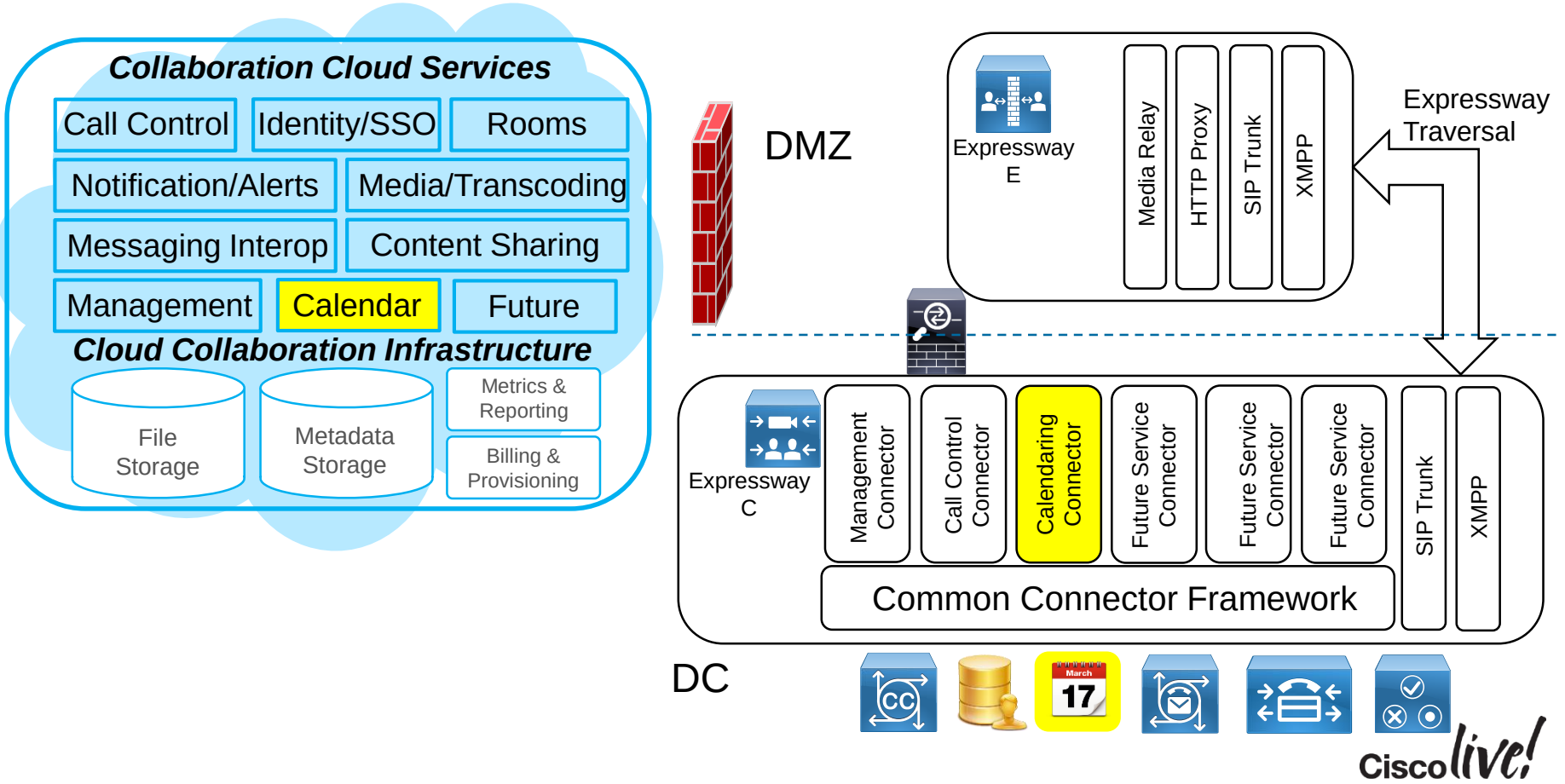
# Integrating Exchange Calendar





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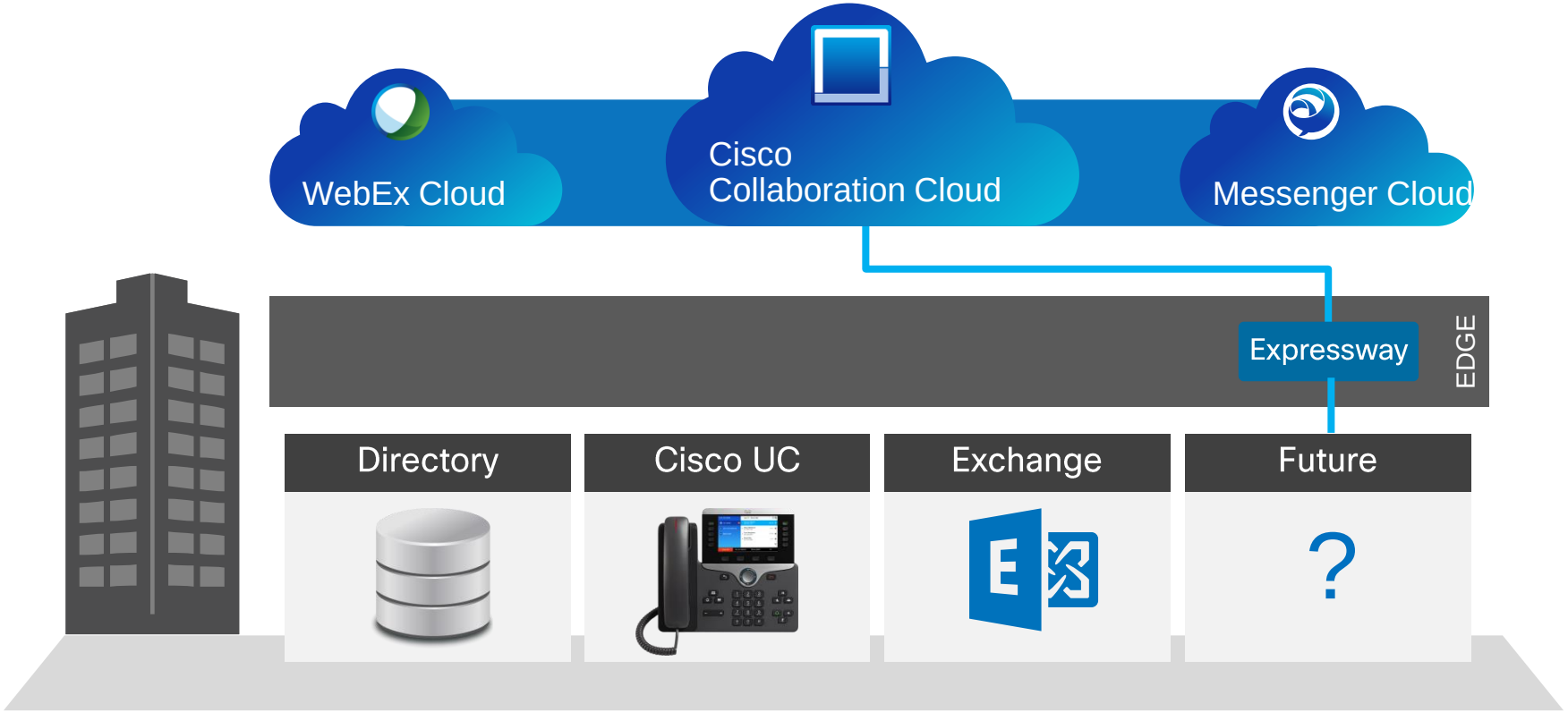
# Future Fusing of Premise and Cloud





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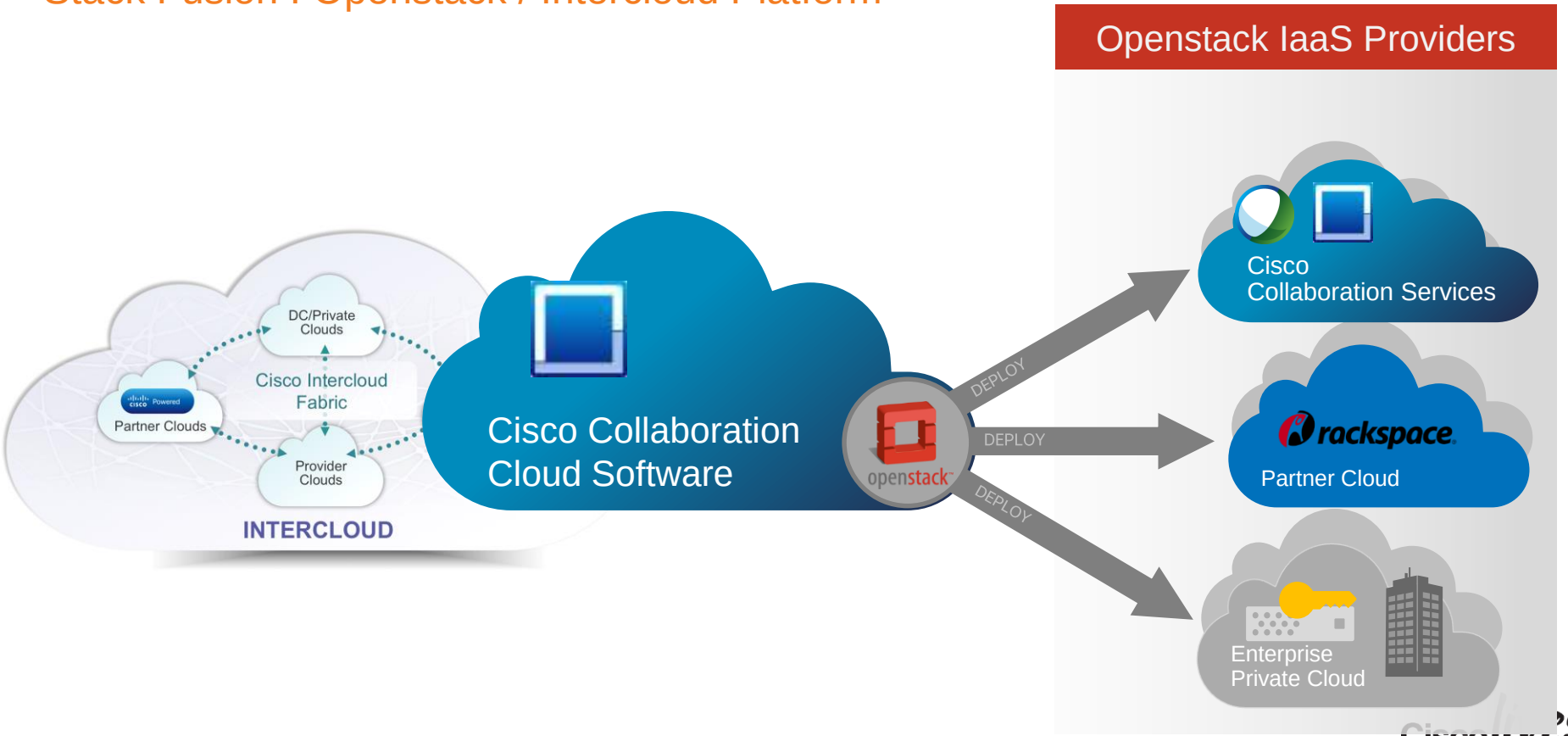
# Future of Cisco Collaboration Cloud Platform

*Future

## Stack Fusion : Openstack / Intercloud Platform





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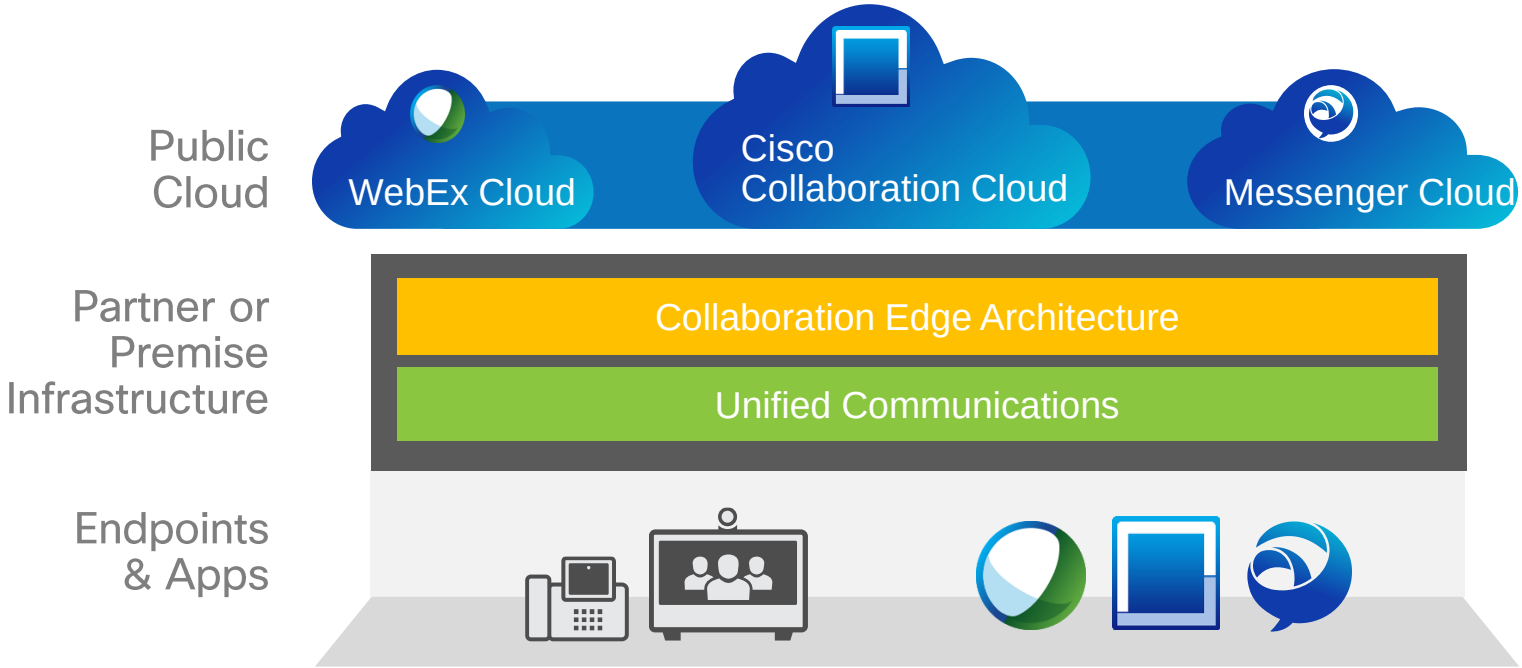
# Cisco Collaboration Architecture … Fused

## Best of Cloud and On-Prem





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Q & A

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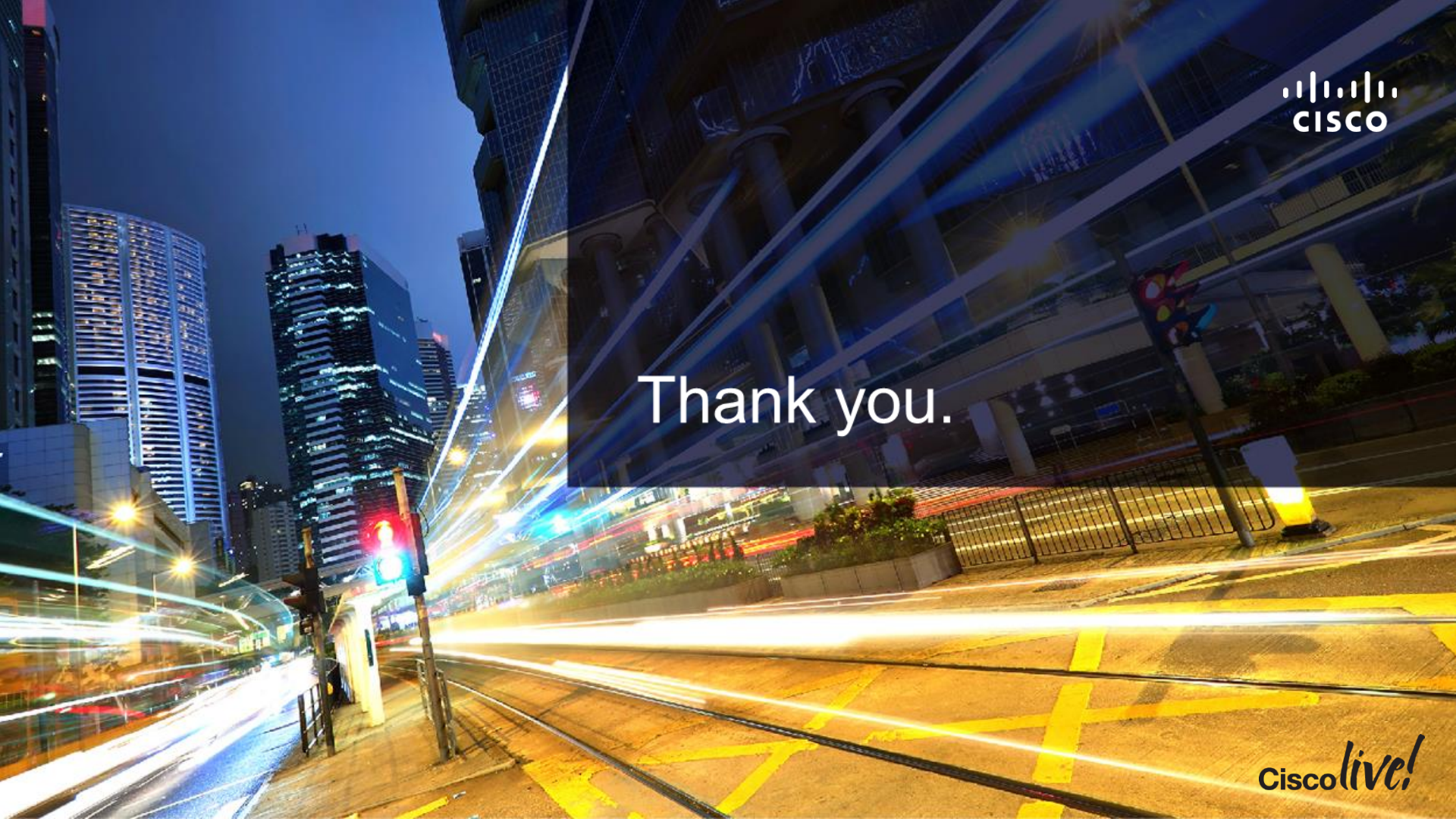
Thank you.
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